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Held Over.—Two articles have been held over till next issue: (1) "Fruit Markets in Japan" (article No. 2 of series), and "Canned Fruit in England."

Murrabit, Vic.

Growers note with satisfaction that Murrabit Blue Ribbon brand Oranges have won an esteemed place in the markets of Australia and New Zealand, and the enhanced prices prove that buyers are appreciating this brand. During November supplies went forward to Brisbane, Townsville and Cairns in the north, and as far south as to Tasmania and New Zealand.

A trial consignment also went forward to Batavia with the object of opening up a new market.

All groves blossomed profusely, and a nice crop is hoped for, despite recent wind storms.

Large acreages have been again devoted to Tomatoes.

Tobacco-growing is being attempted in an experimental way.

Tobacco Culture.

Early in the year we received a visit from Mr. Temple Smith, late Tobacco Expert in the Agricultural Department, to give us some idea of the possibilities of growing tobacco. Mr. Temple Smith was of the opinion that the land in Murrabit generally was too rich for growing the right class of tobacco leaf; he considered that we would produce abundant crops of the heavy colored leaf and not the highly colored lemon leaf that is in great demand by the manufacturers. After a personal inspection Mr. Temple Smith selected patches of land that he considered would be suitable, and advised people to go ahead and put in good acreages. In cases where doubt existed as to the suitability of the soil, only trial plantings have taken place. These experiments are being followed with keen interest by the whole district.

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We have been advised by cable that representatives of Messrs. Pask, Cornish & Smart, Covent Garden, London, England, have been appointed in Victoria and New Zealand as follows:—Victoria: Esmond Russell Pty. Ltd., 395 Collins-street, Melbourne. New Zealand: Tonkin Bros., Ettrick, Otago, New Zealand.

SUGAR ENQUIRY.

Report Not Expected Till March.

THE SUGAR ENQUIRY COMMITTEE is having a strenuous time, and it is hoped that as a result of its labors, permanent good will accrue to Australia.

It was deemed to be significant that after examining witnesses in Queensland, N.S.W., and Victoria, only two witnesses had asked for a removal of the embargo.

(1) The general attitude was that if the embargo were to be removed, an exceedingly heavy or prohibitive duty would be substituted.

(2) It is hoped that in any renewal of the sugar agreement the price to the public will be reduced.

(3) A strong case has been made out for a special reduction in the price of sugar for use in the jam and canned fruits industries.

The request is that sugar used in fruit processed for Australian consumption should be made available at £10 per ton less than the price to the public. Allowing say 30,000 tons of fruit to be used for fruit processing, this would provide a fund of £300,000.

On the Committee to administer this fund could be represented fruitgrowers, fruit processors, cane growers, sugar millers, with an independent chairman appointed by the Government. The general allocation of the fund would be as follows:—One-third as a contribution to make good the loss on canned fruit exports; one-third to reduce the price of jam in Australia, and one-third to be retained by the fruit processors, providing that growers were paid a stipulated price for the fruit.

While in Sydney, evidence on behalf of the fruit industry was tendered by Col. E. E. Herrod (Secretary, N.S.W. Fruitgrowers' Federation), and others. In Victoria, a capable and comprehensive statement was presented by Mr. Jas. L. Moore on behalf of the Australian Fruit Canners, Condiment and Jam Manufacturers' Association.

Mr. S. P. Cornish, on behalf of the Australian Canning Fruitgrowers' Association, and other growers, tendered evidence effectively.

Witnesses were keenly cross-examined, but they stood their ground and were able to demonstrate that the fruit industry had severely suffered under the terms of the sugar agreement.

Mr. Anton Lenne, Ardmona, presented a strong case showing the serious effect of the sugar agreement on orchards in the Goulburn Valley.

In South Australia evidence was carefully tendered by Mr. W. J. Kimber, Secretary of the S.A. Fruitgrowers' and Market Gardeners' Association. The Committee also visited Western Australia, and will take evidence in Tasmania in January.

. . . .

It was hoped that the Committee's report would be available by the end of 1930, but it would now appear that the report will not be completed until March.

On a forecast being published to the effect that the Committee would recommend a continuance of the embargo consequent on a reduction in the price of sugar, a reply was made by the Acting Minister for Markets (Mr. Forde), to the effect that the cancellation of the embargo would mean wiping out the Australian sugar industry, which was worth £10,000,000 per year to Australia. No Government would stand for such a course being adopted. The Cabinet had not given any consideration to a reduction of price, but was awaiting the Committee's report.

SUGAR EMBARGO.

Renewed Provisionally.

If Sugar Prices are Reduced, Then Sugar Contents of Jams, etc., Will Share Proportionately.

The Acting Prime Minister (Mr. Fenton), has announced that, in view of the necessity of giving long notice to sugar planters, the request which had been made for the continuance of the present embargo would be granted provisionally.

The growers would now have the assurance that they could plant in the new year. It was not intended, Mr. Fenton added, to consider any alteration in the sugar prices till the report of the Committee was received—probably towards the end of March. Recently it was notified that if any change was made later in prices the jam makers and other preservers would receive the benefit on the sugar content of the stocks in hand.

WORLD'S CITRUS POSITION.

International Conference Suggested by California.

THAT the world's Citrus situation demands attention from an international standpoint is the opinion earnestly expressed by Mr. Bruce McDaniel, editor of "Citrus Leaves," the official organ of the Mutual Orange Distributors, Redlands, Cal., U.S.A.

The time and place of the Conference are details which could be decided on. The present question is: Would such a Conference be of genuine value to the Citrus industry?

Mr. McDaniel points out that it is much easier to start agricultural production than it is to stop it. Particularly if commodities are tree crops such as Oranges, Lemons and Grapefruit. The time to act is before the aggregate world acreage, and world output reach a point inimical to the economic welfare of the grower. The question is then pointedly asked:—

In order that every district engaged in growing citrus fruits may have direct and reliable information concerning the present world-wide situation in the citrus industry, would it not be advisable, in your judgment, to hold an international conference at which problems and distribution of the world's citrus crop might be frankly and fully discussed?

* * * * *

The foregoing suggestion is of extreme importance, and, in the opinion of the "Fruit World," the answer to the question as to the desirability of the conference is an unhesitating "yes."

Only good could follow from such a projected conference. Delegates from all the citrus producing countries would be made intimately aware of the world situation, and would go back to their respective countries with a wealth of valuable information which would undoubtedly assist in stabilising the world citrus position. The trouble in the past has been that various countries have gone ahead with their individual planting programmes, and subsequently found that the industries which it was hoped to foster, had been practically ruined.

The world is daily becoming more international in character and thought. Means of transport are being steadily improved; while communication by wireless has brought the nations of the earth closer together in a wonderful fashion.

We are now brought face to face with the fact that the world is economically a unit. We are all members of one world body. When one member suffers, the others suffer accordingly. More and more the idea is deepening as to the value of co-operation, not competition.

There are other subjects on which world conferences are yielding fruitful results. Certainly as regards the citrus situation the time is ripe for the calling of this projected international conference.

* * * * *

In fact, it may be anticipated that there will be universal approval for this world-wide citrus conference, and the question will be speedily raised as to "where" and "when." California certainly has great claims because of her huge citrus interests, and effective organisation.

South Africa would also put forward her claims for the honor of having the Conference there.

But what about Australia? Here is a young commonwealth bravely fighting its way through economic difficulties. A nation in the making. Our citrus industry is rapidly expanding. We have a climate second to none in the world. Geographically, Australia is easily reached from U.S.A. and South Africa, while the delegates from the Mediterranean countries would find much of practical interest en route.

Australia would gladly show the rest of the world what she is doing in citrus production, and would readily absorb all ideas for more efficient production and organisation.

* * * * *

The Federal Citrus Council is consulting its branches, and the leaders of the industry in the several States, in order that a considered opinion from the Australian citrus industry may be sent forward.

THE CANNED FRUITS INDUSTRY.

CONSIDERABLE PUBLIC ATTENTION has been focussed upon the canned fruits industry during the past few weeks.

Early in December large public meetings were held at several centres in the Goulburn Valley.

The meeting at Shepparton was one of the largest ever held in that district. Over a thousand persons attended. Mr. J. G. B. McDonald presided.

Mr. S. P. Cornish, Secretary of the Northern Victoria Fruitgrowers' Association, presented a considered statement setting forth the history of the development of fruitgrowing in the Goulburn Valley, from the commencement by the pioneer growers to the present unbalanced condition due to heavy over planting under Government auspices. The Arbitration Court, the tariff, and the Sugar Agreement were contributing factors to the present distressing conditions.

Others who addressed the meeting were Col. Bourchier, M.L.A., Hon. R. Fitzpatrick, M.L.C., Messrs. A. Lenne, L. J. Michel, A. W. Fairley (Chairman Shepparton Cannery), N. Hanlon and others.

Mr. Fairley said the cannery could only take 50 per cent. of the growers' fruit in the coming season; the first payment would be £5 per ton, but he hoped the growers would finally get much more than that. Last season the canneries processed 43,000,000 cans, expecting to sell 1,000,000 cases (24 cans to the case), in England. So far only 230,000 cases had been sold there.

There would be, at the end of December, 17,000,000 cans of fruit stocked in Australia—a year's supply, without any additional canning. It was no solution to suggest canning this season's crop—putting up 43,000,000 cans and providing 2,000,000 cases for export to Great Britain.

A resolution was carried: "That this meeting of fruitgrowers, business people and wage earners of Shepparton and district, realising that the prices offered by the canneries to the growers for the approaching season's canning fruit, and the limited quantities they are prepared to take means ruination to hundreds of growers, we emphatically declare that past Governments and Parliaments are responsible for the present plight, and we call on the Federal and State Governments to shoulder their responsibilities."

* * * * *

A deputation met the Premier (Mr. Hogan), and requested a grant of £75,000 to subsidise the canned fruit export trade, otherwise there would be big wastage and greatly lessened employment.

The Premier said it was impossible to make the desired grant and asked the deputation to form itself into a committee to devise means for processing the 8,500 tons of fruit which would otherwise rot. He would consider a modified proposal for assistance.

ORANGE EXPORT TO CANADA.

THAT Australia will have a permanent market in Canada for citrus fruit was the opinion recently expressed by Mr. A. M. Weymark, a Director of the N.S.W. Wholesale Fruit Distributors Ltd., who returned to Sydney on December 4.

Mr. Weymark considered that it would be necessary to fight American interests. Canada was sympathetic towards inter-Empire trade. He looked forward to an expanding market in Canada for Australian Oranges.

AMERICAN FRUIT CROPS.

THE Californian Apple harvest has been completed, states the Californian Crop Reporting Service in its report for November 1, 1930.

Apples.—Reports indicate that the total 1930 Apple production in California was 11,644,000 bushels, with about 6,522,000 as the commercial crop.

For the United States as a whole, 162,016,000 bushels total crop are reported, with 99,240,000 bushels as a commercial crop.

In Washington State the commercial crop is estimated at 32,499,000 bushels, and in Oregon at 4,905,000 bushels.

Pears.—Californian production, 227,000 tons. Quality generally good. Despite the severe damage wrought by Pear blight the production has been large, the serious blight damage being irregular in its effect, both as to districts and orchards within districts. This crop may be compared with the total production of 190,000 tons in 1929, and 224,500 tons in 1928.

The Pear production estimate for the entire United States, 25,229,000 bushels.

Cold Storage In Australasia

FRUITGROWERS' COOL STORES ASSOCIATION OF VICTORIA.

The quarterly meeting of the Fruitgrowers' Cool Stores Association of Victoria, was held at Melbourne, on November 25.

There were present:—Messrs. Frank Moore (Blackburn), W. Mock & A. R. Fankhauser (Burwood E.), H. L. Tomkins & R. Langley (Croydon), R. E. Petty and J. J. Tully (Doncaster Central), A. E. Ireland (Doncaster E.), J. H. Lang & H. M. McLean (Harcourt), J. J. Tully (orchardists), J. G. Aird (Ringwood), T. W. White (Somerville), C. Wallace, F. J. Byrne and F. Clarke (Wantirna), A. E. Hocking, E. H. Hatfield and W. Lipscombe (private stores), and the Secretary.

Apologies for absence received from Messrs. G. F. Fankhauser, J. W. Barrett and W. Mackinlay.

The President, Mr. A. E. Hocking, occupied the chair.

Affiliation Fees.—Correspondence was received from several stores objecting to the increase in affiliation fees as agreed at the Burnley Conference. The President offered to personally interview these stores as regards affiliation.

It was resolved that the President be thanked for his offer, and the matter be left in the hands of the President and Secretary.

The effect of the increase in affiliation fees to 5/- per 1,000 case capacity on interstate and Goulburn Valley stores was discussed. It was pointed out that on account of distance it was impracticable for interstate stores to send delegates to quarterly meetings. Also that portion of the business transacted at quarterly meetings was of local interest. The concensus of opinion being that this phase being overlooked at the Burnley Conference, some concession should be made with the view of retaining the affiliation of all those stores at present in the Association, and an endeavor made to secure the affiliation of all the other interestate stores.

It was decided that the affiliation fees of interstate and Goulburn Valley stores be £3/3/- per annum.

It was further decided to circularise fruit cool stores in other States, requesting their favorable consideration of affiliation with the Fruitgrowers' Cool Stores Association.

Employers' Federation.—The Secretary reported having received a request from the Victorian Employers' Federation, asking that a representative from this Association attend the annual meeting of the Federation, also that he had asked the President, Mr. A. E. Hocking, to attend the meeting.

That the Secretary's action be endorsed, and that the President, Mr. A. E. Hocking, be appointed this Association's representative to the Employers' Federation.

Mr. Hocking thanked the meeting and reported that he had been elected at that meeting to the Executive Council of the Employers' Federation.

Members extended congratulations to Mr. Hocking on his appointment.

Fruit Preservation.—Correspondence was received from the China Indent Co., drawing attention to a new process of Fruit Preservation, especially as regards citrus fruits.

It was decided that the matter be left in the hands of the President and Secretary to make further investigations.

Mould in Storage Chambers.—Mr. G. B. Tindale, of the Department of Agriculture, attended by request to address the meeting on "Mould in Cool Storage Chambers," which subject had been listed by Wantirna Cool Store for information. Mr. Tindale pointed out that there were two different moulds which in the early stages appeared similar; the mould under discussion could be controlled by spraying the chamber walls, etc., with bluestone, Bordeaux, Bordeaux and spraying oil combined, or corrosive sublimate 1 per cent. The other mould, which was an early stage of dry rot, was more difficult to control. The remedy being to remove all affected timber, treat with coal tar creosote, and increase the ventilation.

During the general discussion which ensued, Mr. F. Clark, engineer of Wantirna Cool Store, submitted a formula for fumigating the chambers, which in some stores had proved successful in the control of mould. (Formula published elsewhere in this issue.)

It was resolved that with the approval of the directors of the Wantirna Cool Stores that the Department of Agriculture be requested to investigate the mould condition in the storage chambers and report to the directors of the store.

On the motion of the President, a vote of thanks was conveyed to Mr. Tindale.

The Sugar Position.—A request from the Northern Victoria Fruitgrowers' Association for financial assistance towards delegates' expenses at the Sugar Enquiry was deferred till the annual conference.

A resolution was carried requesting the Federal Government to speed up the Sugar Enquiry.

Growers' Conferences.—The Secretary was requested to call a conference of kindred Associations to discuss the advisability of periodical round-table conferences on questions effecting the general welfare of the industry. Also the advisability of all bodies holding their annual conferences in some country district during one week to be mutually decided.

Mr. G. H. Fankhauser.—It was decided that a letter of sympathy be forwarded to Mr. G. H. Fankhauser, and the good wishes of the Association for his speedy recovery.

A suggestion was put forward that the executive consider the advisability of drawing up a syllabus for quarterly meetings on the lines of a questionnaire.

NEW CITRUS BOOK.

A book entitled "The Culture of Orange and Allied Fruits" is in course of publication in South Africa. The author is Mr. H. Clark Powell, Prof. of Horticulture, University of Pretoria, Pretoria, South Africa.

There are seventeen chapters giving a wide range of information. The book is available from the Central Newsagency Ltd., P.O. Box 1033, Johannesburg, South Africa. Price 21/6 post free.

Friend: "So your last daughter is safely married?"

McLaren: "Yes, and the confetti is getting awfu' gritty.

Fruit Export from Western Australia.

Apples and Pears.

Valuable Advice Issued by W.A. Fruit Organisation Committee.

Picking, Packing, Handling, Wiring, Varieties, etc.

TO RENDER SERVICE to growers and exporters, a pamphlet has jost been compiled by the Western Australian Organisation Committee. The following information is tendered:—

APPLES.

Growing the Crop.

To produce good fruit suitable for export, it is necessary that every part of the orchard work be performed on up-to-date lines.

The operations of pruning, spraying and cultivation are all important to the production of a successful crop, and too much attention cannot be paid to them by the progressive grower.

Information can be obtained by application to the Department of Agriculture, Perth, or to one of the Department's District Inspectors, all of whom welcome enquiries.

Growers are strongly recommended, therefore, to **make certain** that they are working on the right lines in the essential matters of pruning, spraying and cultivation.

Thinning.—This is not yet carried out generally, but it is an operation which the Committee strongly urges all growers to perform. In view of the prospective heavy crop it is more than ever essential this year.

Advantages.—A more even grade of fruit is assured. Picking and packing are rendered far easier. The capacity of the tree is not unduly strained, thus making for a better average crop.

Method.—Thinning scissors are sold for the purpose but many experienced men prefer to use the finger and thumb, using a quick twisting upward movement. Apples must be broken off without pulling the stalk from the trees as the removal of the stalk is liable to weaken the remaining Apples. The centre Apples of the bunch in every variety, should be the first removed. Discretion must be used in the number of Apples left, older trees requiring harder treatment than young trees. Generally speaking, two Apples to a fruit bud, is sufficient, and often only one in the case of Yates. This is a matter, too, on which advice may well be sought from the Departmental Inspectors.

Harvesting the Crop.

Picking.—Keep special cases for picking. Cases to be used for export should never be allowed in the orchard.

Pick all fruit at its right stage of maturity. Immature and over-ripe fruit, even it it avoids rejection at the ship, will not carry satisfactorily.

Avoid bruising. Don't drop fruit into cases, but use picking bags and see that they are emptied carefully. Lower the bags into the box and withdraw as gently as possible.

It is a waste of time and money to send reject fruit to the packing bench. Cull for export when picking, setting aside for separate handling, all malformed, spotted or undersized fruit.

Pickers can also help with the grading by picking fruit as nearly as possible to size and leaving smaller fruits for a later picking. This applies also to picking for color.

Only the best quality fruit should be picked for export.

Don't leave fruit lying about the packing shed. Pack and despatch without delay.

If fruit cannot be shipped immediately, it is recommended that arrangements be made with a cool store to hold it pending shipment.

Marketing the Crop.

Cases.—The use of redwood cases only for Apples is strongly recommended, as owing to their distinctive nature they have a big advertising value in overseas markets, where fruit from other countries is packed in whitewood cases.

Too much care cannot be taken to keep cases clean, and to see that they are neatly made up.

All the advantage of good quality fruit will be lost through a dirty and unattractive looking case.

Preparation of Cases.—As it is necessary to make provision for shrinkage of local hardwood timber, boards are cut by the mills a little larger than necessary, but this is kept down to the lowest possible minimum to avoid oversize cases. Care, however, must be taken in the handling of cases after arrival, as instances have been known where they are left at the sidings two or three weeks in the sun and rain, then stacked in the open, or in a lean-to, and finally made up and used as picking boxes under hot sun, the result being that the cases shrink to undersize.

Cases should receive careful attention after leaving the mills. The trucks should be sheeted as they are often two weeks on the line in hot sun. After arrival shooks should be immediately stacked close together under cover, and old bags placed in front and on top to prevent air from getting to them; it is advisable to take off the wires so that the boards can be stacked closer together.

Should it be necessary to make up cases some time before using considerable care is necessary. Notwithstanding the stacking of made-up cases bottom to bottom, as is sometimes done, the bottom boards are apt to curl at the edges.

It is recommended, therefore, that bottom boards be not nailed on until just prior to packing, and that instead of stacking bottom to bottom, cases be stacked closely together, top or bottom side up, so as to prevent the warping of the ends. They should then be covered with old bags, as with air passing all round they easily shrink and warp.

Nails and Wiring.—Whenever convenient, cases should be wired, the wires being placed as near the ends of the case as possible. When cases are not wired cement coated nails should be used for tops and bottoms.

1¼in. nails for tops and bottoms, and 1in. nails for sides, are recommended.

A nailing down press should be used. Inexpensive presses can be purchased or growers can construct an effective press themselves at a cost of a few shillings.

In any event cases should never be placed on a flat surface to be nailed down. Use battens.

Branding.—Branding should be carried out in accordance with the commerce grading regulations, and the instructions issued from time to time by growers' shipping agents.

Labels give a far more attractive appearance than stencilling, and if, therefore, stencilling is used, every effort must be made to secure a neat finish.

The practicability of a suggestion to print cases at the mill, is being investigated.

Packing.—Contract packing is not desirable. Every care must be taken to avoid bruising, and with this object, one Apple should never be allowed to rest directly on another, as in the wall or square pack, which packs should never be used.

Remember one damaged Apple will damage others; these others will damage whole consignments, and bad consignments damage the State's standard.

Straw boards must always be used on sides and either straw boards or woodwool at tops and bottoms.

Finish the pack with a slight bulge.

Slack packing means bruised Apples.

Handling and Loading.—Stack cases on sides, **not** on tops or bottoms, and never allow cases to be walked on.

Load separate trucks for different ships.

Truck loads should be level on top from end to end of truck to avoid damage from cases falling from one tier to another during shunting.

Cases should be **placed** in position; never thrown nor dropped.

Use as a slogan throughout all operations:—

"Handle Carefully."

Varieties.—From a commercial point of view, the best export varieties in order of merit are:—Granny Smith, Cleopatra, Dunns, Jonathan, Rokewood.

Buyers require big lines and are not interested in a few cases of odd varieties.

All Jonathans over 2½ grade, should be kept for the local market.

PEARS.

Suggestions for Dealing with Pears for Export.

PICK EARLY IN THE MORNING while the fruit is cool. Very great care is necessary to avoid breaking or bruising the skin.

The stem on the Pear projects more than on most fruit, consequently Pears are very liable to stem stabs. When the skin is broken, Pears decay quickly, and, as most varieties of this fruit are of a very juicy nature, one decayed Pear will soon affect not only the whole case, but every case stacked beneath.

Juice from even one damaged case running down the outside of a stack, when seen by the buyer, will affect the value of the whole stack, being taken as an indication that the fruit is faulty throughout.

Most varieties ripen very rapidly after being picked, and it is necessary, therefore, to pick the fruit before it reaches maturity. The exact stage of immaturity at which the fruit should be picked varies with different Pears. For example: L'Inconnue, Winter Nelis and Broom Parks should be allowed to become more mature than say, Comice, Beurre Bosc, Winter Coles or Josephine.

Growers are recommended to seek advice on this matter from the Department of Agriculture or from their local association.

Packing.—The correct packing of Pears is a matter of great importance. The fruit must be handled with care throughout.

Experience has shown that only two types of packages should be used, viz., either half dumps or trays.

Trays are Recommended for large sizes of: Comice, Josephine, Winter Nelis, Packham's Triumph, Beurre Bosc and Glou Morceau.

Half Dumps are suitable for the small sizes of the varieties mentioned for trays and for Vicars, Broom Park, L'Inconnue, Howell and Keiffers.

Pack Pears Immediately After Picking.

Trays.—Trays should be about ¼ inch deeper than the diameter of the fruit to be packed so as to allow a liberal supply of woodwool on both bottom and top. Otherwise the skin of the fruit is damaged by contact with the boards.

Pack as tightly as possible on top of a pad of woodwool to prevent any movement of the fruit.

Slack packing is responsible for much damaged fruit.

Three trays wired together make a highly effective package which growers are recommended to adopt.

Half Dumps.—Use a teasing of woodwool at bottom and top with strawboards on the sides. As with trays, pack tightly.

Growers who are not certain how the various varieties should be packed, are recommended to obtain a demonstration from their local Association or from their shipping agent.

Pears in a prime condition and free from bruises and blemishes will always realise payable prices on the European market, but bruised and damaged Pears are practically worthless.

Concentrate on securing a neat, clean package.

Attractive appearance will help to secure attractive prices.

Nails.—Cement coated nails 15 gauge, are recommended: 1in. for hardwood cases and 1¼in. to 1½in. for softwood trays.

Avoid Delays.—One of the principal causes of Pears arriving overseas in over-ripe condition is delay between date of packing and date of shipment. The danger from this source can be practically overcome by consigning fruit immediately after packing to a cool store to await the arrival of the vessel.

Export Varieties.—It is desirable that export should be limited to the following varieties, which are undoubtedly the most suitable:—Comice, Josephine, Winter Nelis, Packham's Triumph, Beurre Bosc, Glou Morceau.

There are, of course, growers dependent on other kinds, but it is recommended that these trees be gradually worked over and the varieties mentioned above substituted.

To obtain the best results, therefore, in competition with fruit from other countries where shippers are constantly improving the standard of their exports, growers are urged to give attention to the following essential points:—

1. Grow suitable varieties.
2. Pack prime fruit only.
3. Avoid bruising and stem stabs.
4. Careful attention to packing methods.
5. Neat, clean standard packages.
6. Consign to cool store immediately after packing.

In conclusion the Committee invite enquiries from growers for information, and will be pleased to give consideration to any suggestions received for the betterment of the industry.

All correspondence should be addressed to the
Secretary, Fruit Organisation Committee,
c/o, Walter M. Collins & Co.,
Chartered Accountants (Aust.),
Commercial Union Chambers,
Perth.

* * * * *

The personnel of the W.A. Fruit Organisation Committee is as follows:—Messrs. G. W. Wickens, Superintendent of Horticulture (Chairman), A. T. Booth and G. Simpson (growers' representatives), F. Simper and R.

M. Carter (W.A. Fruit Shippers' Committee), C. H. Merry, A.C.A. Secretary.

The Committee was formed to function on the lines of a State Advisory Board, and in particular to convey to growers information on matters of importance—with special reference to export.

The foregoing is one of the first activities of the Committee, and the co-operation of growers is invited on all matters affecting the welfare of the industry.

WOOROLOO.

Apples and Pears are the main fruits grown hereabouts, also Jap. Plums and Peaches, with a few Oranges. Varieties of—

Apples.—Jonathan, Cleopatra, Granny Smith.
Pears.—Bartlett, Josephine, Packham's Triumph.
Peaches.—Triumph.
Plums.—Satsuma, Santa Rosa, Wickson.
Oranges.—Navel and Late Valencia.

Crop Prospects.

Apples, good (last season very poor, about 10 per cent.). Pears, good (last season about same). Plums, light (last season about 75 per cent. more). Peaches, light (last season about 60 per cent. more). Oranges, medium (last season about same).

The Wooroloo district is mountainous, with heavy jarrah forest, about 800 ft. above sea level, on the Eastern Goldfields railway, 36 miles from Perth, 48 miles from Fremantle, the nearest sea port.

Apples and Pears are mostly exported to England and the Continent, while stone fruit and Oranges are sold in the Perth markets.

Shippers are offering 6/6 per bushel case of Jonathan Apples on rail at Wooroloo station, and 7/- for Cleo. Granny Smith being a late variety, we expect to get a 1/- or so more.

There is a possibility of these prices being improved when sales overseas are finalised.

Our own orchard contains ten acres: six acres Apples, Jonathan and Cleo. mostly, two acres stone fruit, Plums, and two acres Oranges, Navels and Late Valencia; the orchard is young.

The largest orchard in this district contains about 30 acres.

A. H. THIEL.

Wooroloo, W.A., 4/12/30.

GUILDFORD.

Vine Fruits Specialised.

The Guildford district has mainly vines, with a few groves of Oranges, Apricots and early Peaches.

The main varieties of Grapes are Muscats, Wortley Hall, Red Prince, Red May, Purple Cornichon, Ladies' Finger and Santa Paula for the local market.

For export we have the Ohanez, Black Malaga, and Valensy. Red Prince are also exported.

For drying we have Currants, Sultanas and Muscats.

The prospects for this season are very good so far. Most varieties have set well, but it is too early to judge the setting of Ohanez and Black Malaga. Currants have set well and generally appear to have a heavy crop.

Sultanas are fairly light as a lot of the canes on the rods are not carrying fruit.

Most people in this district produce for the fresh market, in conjunction with dried fruits, as we are only a few miles from Perth, and also pack for country buyers, there are also the larger places which send for export to England, Java, Singapore and Colombo.

So far this year the vines seem to be free from spot or oidium.

Apricots and Peaches are very light compared with last season.

Last year the Valencia Vineyards Ltd. put in a still, so it is to be hoped that a lot of Grapes this year will go for spirit instead of going on the local market.

There is very little planting going on in this district now, some growers are changing from Currants to Shiraz, and Burgundy, for wine.

The Midland Junction Technical School has started a class for viticulture and horticulture, which has been of great value to the growers who have attended. Manuring, spraying, etc., were dealt with, and there were field demonstrations for pruning.

H. THOMAS.

Guildford, 29/11/30.

WESTERN AUSTRALIAN FRUITGROWERS' ANNUAL CONFERENCE.

December 11 and 12, 1930.

THE ANNUAL GENERAL CONFERENCE of the W.A. Fruitgrowers' Association was held at Mt. Barker, Mr. J. McNeil Martin (President of the Association) presiding.

Representatives were present from Albany, Mt. Barker, Bridgetown, Manjimup, Eastern Hills district, and Spearwood shippers.

Conference passed a motion that a voluntary levy of ½d. per case on all export pip fruits be made to establish a fighting fund to deal with disease outbreaks, to meet expenses incurred in sending delegates to conferences held in the eastern States, and for use in any matter furthering the interests of pip fruitgrowers.

Other motions passed were:—

1. That Conference press for further pre-cooling facilities at Fremantle wharf.
2. That the Government be asked to make further shipping facilities for the Java and Singapore trade.
3. That the Federal Government be asked to make further efforts towards the removal or reduction of the import duty on Apples and Pears shipped to Germany.
4. That the Department of Agriculture be asked to make further investigation into powdery mildew disease.
5. That delegates to the Annual Australian Fruitgrowers' Conference should not be allowed to vote on matters which do not directly concern the State they represent.
6. That no relaxation of the Plant Diseases Act be allowed.
7. That in view of the seriousness of the recent outbreak of thrips, that the Federal Government be asked to take immediate steps to investigate and devise means to combat this pest.

The Thrips Pest.

Speaking after the above motion had been carried, Mr. W. H. Carne, of the Council of Industrial Research, gave Conference the latest information at his disposal. He personally regarded thrips as the most dangerous pest that orchardists had to contend against. He pointed out that little was known of its life history and habits, but what was known showed that, given favorable conditions to its early development in spring, it was very difficult to deal with, both spraying and dusting being of apparently little use. He had been present in Mt. Barker, together with the Superintendent of Horticulture, at the early stages of the outbreak, and hoped that his observations then would prove of benefit to the growers.

Conference then discussed the proposed Australian Fruit Export Association.

Both growers and shippers were opposed to the proposal that the Canadian bushel case be made compulsory, shippers pointing out that buyers of W.A. fruit were quite satisfied with the W.A. hardwood dump case, and had sent out reports to that effect.

Conference was not in favor of any alteration of the grading regulations, and were satisfied with the existing arrangements existing between growers and shippers.

Conference decided to await the return of the W.A. delegate to the Conference at Melbourne before taking further action.

Officers were elected for the coming year:—

President, Mr. J. McNeil Martin (Mt. Barker); Vice-President, Mr. H. Lake (Bridgetown); Hon. Secretary, Mr. A. T. Booth; Executive, three members from Mt. Barker, one each from Bridgetown, Manjimap, Albany, Argylle.

MT. BARKER NOTES.

CROP PROSPECTS here are very bad. Prior to blossoming, growers anticipated a record Apple crop following on last season's very light one, buds looking remarkably healthy. Seasonal conditions seemed to delay the trees, which were then attacked by thrips in plague form. These were first present in mid-August. and even now are to be found infesting Apple trees.

As this is the second outbreak of thrips in four seasons, growers are becoming alarmed, as so far spraying or dusting appears to have little or no effect.

Of the main varieties grown here, Jonathans are the only ones to set even fair crops, Cleos. are very patchy, Dunn's a failure; and of late varieties, G. Smiths show a fair setting, but Yates a failure.

Mr. Carne, Commonwealth Pathologist, has paid several visits to the district, investigating thrips, and considers that thrips are becoming a very serious pest in orchards. Present estimates of the crop are about one-tenth of the expected crop, most orchards having practically no fruit at all, Pears also having been affected.

This week the West Australian Fruitgrowers' Conference will be held here, and it is proposed to ask the Government to make a thorough investigation into the thrips pest.

G. R. P. Wall.

WESTERN AUSTRALIA.

A Good Crop of Apples Expected: Pears Light.

A report is to hand from Mr. G. W. Wickens, Superintendent of Horticulture, Perth, W.A., giving a summary of the 1931 fruit crop prospects. Thrips appeared in some districts and reduced what appeared to be a 1¼ million bushel Apple crop to one which will be around 800,000 to 850,000 bushels.

Previous heavy seasons with Apples were:—1928-29, 1,122,713; 1926-27, 901,464; 1922-23, 758,998.

The Pear crops will be light, though these were not damaged by thrips. Stone fruit will be lighter than last season, particularly late varieties of Apricots and Peaches.

Grape vines—table, drying and wine varieties—are carrying good crops and the production promises to be equal to last season.

It is yet too early to estimate the citrus crop, but present indications point to a lighter crop than last season, which was the heaviest for some years past.

To Summarise.—Apple crop, season 1929-30, 442,243 bushels; estimate for 1930-31, between 800,000 and 850,000 bushels. Pear crop, season 1929-30, 87,461 bushels; estimate for 1930-31, 50,000 bushels. Peach crop, season 1929-30, 65,547 bushels; estimate for 1930-31, 50,000 bushels. Apricot crop, season 1929-30, 62,193 bushels; estimate for 1930-31, 45,000 bushels. Plum crop, season 1929-30, 70,732 bushels; estimate for 1930-31, 55,000 bushels. Nectarine crop, season 1929-30, 15,231 bushels; estimate for 1930-31, 10,000 bushels. Grape crop, season 1929-30, 276,729 cwts.; estimate for 1930-31, about the same quantity.

Mr. Godfrey Hester, "Hester's Hills," via Bridgetown, W.A., sends the following notes, under date October 28:—In this, the Nelson district, we have a most wonderful crop of Apples setting, all varieties, and especially Jonathans, Cleos., Granny Smiths, Nickajacks, Dunns, and others. The trees were sprayed fairly early with the usual oil sprays, and later, when the buds began to move, with sulphate of iron.

The sulphate of iron is certainly a wonderful provision against the powdery mildew, we have cleaned it up, and the trees look beautiful and in the best of health.

Now that wool has fallen to about 6d. per lb., and mutton unsaleable, many of the farmers who have a few acres of orchard are most fortunate, as they have something that so far promises a fair return. Those who have nothing but sheep and wheat are poor indeed.

I am sorry to say that we are told that the Apples in the Mount Barker district are overrun with thrip, and it is causing the most serious losses to the orchardists in that district. We fear that the Apple crop in the Mount Barker district was more than half ruined with the pest. If this is so it will be a big financial loss to W.A. as Mount Barker is one of our very best Apple-producing parts of this State.

There has been a good deal in "The Fruit World" recently with regard to fruit cases—their shape and size and color, and I would like to say that the W.A. Applegrowers would be very foolish to think of parting with our red wood jarrah case; it is not a case that lends itself easily to a colored label, as no color shows up very well on a red wood case, whereas a white wood case is very suitable for a colored label.

Our red wood case has its disadvantages, one being as just explained, and another is its weight, but in spite of those disadvantages, the West Australian Apples shipped in those cases bring some of the highest prices on the world's markets, and that being so, the red cases are an advertisement for the best Apples. Another point in favor of W.A. sticking to the red cases is the economic value of being able to produce our fruit cases instead of sending the money out of Australia to get them. Personally I would not use the white wood cases if I could get them given me.

"But if this rug is all wool, why is it labelled 'cotton'?" "That, madam, is to deceive moths.

* *

Food for reflection might be all right in its way, but it's not very fattening.

New Zealand.

Hawke's Bay.

Report on Crop Prospects for 1931 Season.

The principal fruits grown in the Hawke's Bay district are Peaches, Plums, Apples and Pears. A small quantity of Nectarines, Apricots, Gooseberries, Loganberries, and Strawberries.

In Peaches the usual thing is to have a succession of varieties, commencing with Mayflower in December, and ending with Salway in March. The same applies to Plums, commencing with Wright's Early and ending with Monarch.

In Apples the chief varieties are Gravenstein, Cox's Orange Pippin, Dunn's, Jonathan, Delicious, Sturmer, Ballarat, Dougherty, Granny Smith, and Rome, or Frimley Beauty.

In Pears, William's Bon Chretien, Louise Bon Jersey, Beurre Bosc, Josephine, P. Barry, Winter Cole, and Winter Nelis.

Crop Prospects.

The crops are somewhat patchy this season, due, no doubt, to the unfavorable weather during a portion of the blossoming period. Some orchards have full crops, while others are light in some varieties.

I should estimate the crop this year to be between three-quarters and seven-eighths of what it was last year.

New Developments.

Orchard extension is very gradual, and chiefly Apples are being planted.

More orchards are being piped each year for spraying purposes.

Tractors are gradually displacing the horses for cultivation purposes.

Our export figures almost reached the quarter million mark last season, and more of the packing is being done in the growers' own sheds.

Stationary Spray Plant Successful.

In reference to piping for spraying purposes. The writer piped his orchard, and installed a stationary pumping plant last winter. This system is a big advance on the portable outfit. A saving in time is effected, one is also able to get along with spraying operations after rain, quite a while before one could drag a portable outfit over the orchard. Also the ground can be kept in a better mechanical condition.

Our district is going to advance considerably in the export business, and although we may show a slight falling off for the coming season, we will nevertheless reach the half million mark within a few years.—Ralph Paynter, Hastings, Hawke's Bay, N.Z.

3/12/30.

ETTRICK, OTAGO.

The principal kinds of fruit grown in the Ettrick district are Apples and Pears, but mainly Apples, and the main varieties of Apples are Jonathan, Delicious, Newtown Pippin, Cleopatra, Cox's Orange, Dunn's, Stayman Winesaps, Scarlet Nonpareil, Sturmer, Ballarat Seedling, Statesman, with a small percentage of Esopus Spitzenberg, Granny Smith, and Tasmas.

The area under Apples and Pears is approximately 450 acres, and of this area, roughly, 400 acres would be planted with Apples. The chief varieties of Pears are Winter Nelis, Winter Cole, Beurre Clairgeau, Doyenne du Comice, and Williams' Bon Chretein.

Crop Prospects.

The present crop prospects with reference to Apples indicate about 30 per cent. lower than last season, and Pears 50 per cent. lower than last season.

The Apples have in some varieties set very poorly, while others have set a heavy crop. The same applies to Pears, especially Williams, which have set a very light crop. The poor setting is due to the continual wet weather experienced during the blossoming period.

District News.

The only new developments in the fruitgrowing line are the greater use of the motor tractor, there being quite a number now used for orchard work.

Two stationary spraying plants have been installed. These are the first two installed in this district, one being put in by Mr. William Elder, of Dumbarton, and the other in writer's own orchard at Ettrick. Both plants are operating very satisfactorily, and the growers who have these are more than satisfied by the efficient work done, the saving of time, and the advantage of being able to get on with this work after heavy rains, which would have made the work impossible with the portable spraying outfits.

Almost every grower in the Ettrick district has a power portable spraying outfit; some of these machines are drawn by horses and others by tractors.

Ettrick is the chief Apple and Pear exporting district of Otago, and is the only province in the Dominion that does not come under the Fruit Control Board, and therefore has the privilege of being able to ship fruit to any broker the growers wish to. The growers generally keep their orchards in good condition, the tillage of the soil manuring, spraying, thinning are all well attended to. The absence of pests and diseases go to prove that the growers are alive to the fact that first-class fruit must be grown, and set themselves out to achieve this end.

Cherries are also grown very successfully here. There are two large netted coverings over two blocks of Cherries in the district. One covering is certainly the largest in New Zealand. This is owned by Mr. Fred Geo. Duncan, who has spent much money in this respect to protect the Cherries from the birds. These netted coverings have proved very successful, and allow the growers to leave their fruit on the trees until it has ripened thoroughly.

Late frosts are experienced in the district, and to overcome the damage done by frosts to Cherry crops, Mr. Duncan has

installed firepots,

which are filled with crude oil, and when lighted burn for about 7 hours, and raise the temperature in about 15 minutes from the time the fires are lighted. These firepots are proving quite a success.

A very wet spring has been experienced, probably the wettest spring for many years. Besides being wet, the weather generally has been cold, which has the effect of making all growth backward. Fruit will this year be late in ripening as compared with other seasons.—James Cockburn. 29/11/30.

"Mummy, I'se got stomach-ache," said six-year-old Nellie.

"That's because your stomach is empty; you've been without your lunch. You'd feel better if you had something in it."

That afternoon the minister called, and in conversation complained of a severe headache.

"That's because it's empty," said Nellie. "You'd feel better if you had something in it."

Victorian Fruit Marketing Association

THE monthly meeting of the Executive of the Victorian Fruit Marketing Association was held at the Employers' Federation, Melbourne, on November 28, Mr. H. G. Colombie presiding. There were also present Messrs. C. M. Griffeth, W. H. Carne, G. W. Brown, H. Ford, J. W. Bailey, K. Eagle, W. A. Webb, F. R. Mellor, A. S. Harrison, E. E. Meeking (Department of Agriculture), and the Secretary, Mr. R. E. Boardman. Apologies were received from Messrs. Barker, Parnham, Cave and Mills.

Korean White Pine.—Mr. M. Nathan wrote, stating that as the duty on Korean White Pine was refundable on export, shooks for cases could be supplied at low prices. It was decided to reply, stating that if supplied as 3-ply our experience was that the duty was not refundable; asking for a specimen of made-up case with quotation for quantities, together with an acknowledgment from the Customs Department that the duty paid would be refunded.

Empire Preference.—Letter received from Mr. Parker Moloney, Minister for Markets, from London, thanking the V.F.M.A. for its cable and promising every endeavor to secure preferences for Empire products.

Pear and Plum Export.—The Harcourt Fruitgrowers' Progress Association Ltd. wrote stating that Harcourt growers anticipated exporting Plums this season, and asked for a list of the best exportable varieties, and the kind of package most suitable: also as to the most desirable package for Williams Pears.

The President stated South Africa sent all their Plums in trays. The Plums were of large size, 25 Plums to the tray. This was catering for a luxury trade, and he would not recommend Australia to follow this system at this stage. The American system was to send Plums in boxes containing four punnets of Plums, the nett weight of the fruit being 5 lbs. per punnet, or 20 lbs. nett weight in the box. The gross weight was 26 to 28 lbs. This package seemed excellent for President and Grand Duke Plums. The Canadian type of case had points in its favor.

Mr. Meeking suggested using the Canadian type of case with a depth according to the quantity of Plums to be shipped.

It was decided, on the motion of Messrs. Harrison and Mellor, to approach the Fruit Exporters' Handling Committee with regard to securing suitable chambers on ships for Plum shipments about February. On the motion of Messrs. Ford and Eagle, it was decided to write asking the Department of Agriculture to collate as soon as possible all the information on hand regarding the export of Plums, when the report was ready to submit same to the Exporters' Handling Committee. The following varieties of Plums were deemed to be most suitable:—President, Grand Duke, Satsuma, Golden Drop.

Pear Export.—There was a lengthy discussion. Mr. Meeking stated that if good results could be obtained from using the Canadian standard, then it would be better to scrap the long bushel for the sake of uniformity. Mr. Ford said there appeared to be no difficulty in using the ¾ Canadian case.

Mr. Colombie said that Doncaster growers were convinced as to the suitability of the long bushel. There were six different packages used for exporting Pears. Trays were expensive. He suggested that the Canadian ½-bushel be used for the softer kinds of Pears—Doyenne du Comice, etc.; the ¾ standard for most other types, and the full Canadian bushel for Pears such as Keiffer, W. Nelis, Vicar, Bosc, D'Anjou. It was worth noting that even Williams Pears were sent from the U.S. Pacific Coast in barrels (containing 3 bushels) to England; half barrels and boxes were also used. Very careful attention was paid to picking at the right stage (using pressure gauge) and gentle handling; in addition, all the fruit was washed.

Mr. Griffeth said that one of the most important factors in successful Pear export was picking at the right time. Even with B. Bosc the Pears should be green and hard.

Mr. Webb said pickers should wear gloves or have their finger-nails cut very short: Pears for export from Doncaster were pre-cooled and then packed tightly into the long bushel cases.

Mr. Eagle considered that for many varieties the full bushel was too large. He preferred the ½ Canadian bushel.

Messrs. Bailey and Brown expressed the view that the long bushel was unsuitable for packing Pears for export.

Mr. Bailey moved, Mr. Griffeth seconded, that the following cases be recommended for the export of Pears:—Canadian bushel, Canadian ¾ bushel, Canadian ½ bushel.

Mr. Harrison submitted that the importance of the subject warranted further enquiry and a report should be presented at the next meeting. He moved an amendment accordingly. Mr. Webb seconded. The amendment was lost and the motion carried.

Membership.—The Secretary reported that the Quantong growers had joined the Association, and that there had been a substantial increase in membership following the canvass of growers by the Vice-President (Mr. Griffeth) and the Secretary. Appreciation was expressed for the services of Mr. Griffeth, and a very hearty vote of thanks was accorded, on the motion of Messrs. Mellor and Carne.

New Member Executive.—On the motion of Messrs. Brown and Bailey, it was unanimously decided to invite Mr. C. H. Jost to become a member of the Executive.

The meeting then closed.

SPRAYING AND BEEKEEPING.

(To the Editor, "Fruit World.")

Sir,—According to a par. in your November issue, Mr. Tarton Rayment remarks that bee farmers often lose heavily through poisonous sprays being used when the trees are in blossom.

It has been my experience as an orchardist and beekeeper for many years, that neither Bordeaux nor lime sulphur, which are the only sprays used by any but the most ignorant orchardists during flowering time, harm either the bees or the honey.

Many years ago, this district, the Dandenong Ranges, became practically useless as bee country, owing to foul brood. This pest killed out all the wild bees, till bee trees became as scarce as nuggets of gold, and the losses to bee-keepers were enormous.

Simultaneously with the introduction of Bordeaux mixture as an orchard spray, the trouble began to disappear, and it is many years since a case has been known in the district.

While it is quite true that the use of arsenate sprays when the trees are in blossom is detrimental to pollination, and may be fatal to the bees, that cannot be said of fungicide sprays, which must sometimes be used during flowering time to cope with weather conditions.—Yours, etc.,

"Apiarorchardist."

The Basin, Vic.

Australian Apple and Pear Export Association

Important Conference in Melbourne.

New Export Council Formed.

AN IMPORTANT INTERSTATE Fruit Conference convened by the Victorian Fruit Marketing Association was held at Melbourne on December 10 and 11, 1930.

Meetings were held in the Board Room of the Commercial Travellers' Association.

Delegates were in attendance as follows:—

Tasmania.—Messrs. Neil Campbell, M.H.A., and A. Davies (Tasmanian State Fruit Advisory Board), J. P. Piggott, M.H.A. (Port Huon Fruitgrowers' Co-op.), L. Taylor (Tamar Valley Co-op.), P. H. Thomas (Tasmanian Chief Horticulturist).

New South Wales.—Messrs. H. V. Smith and H. Broadfoot (N.S.W. Fruitgrowers, Federation), E. Johns (Fruit Merchants), C. G. Savage (Superintendent of Horticulture), E. D. Butler (Fruit Export Supervisor).

South Australia.—H. J. Bishop and J. B. Randell (South Australian Fruit Marketing Association), G. Quinn (Chief Horticultural Instructor).

West Australia.—T. G. Sounness (representing the West Australian Fruitgrowers' Association and the W.A. Fruit Shippers' Committee.

Victoria.—Messrs. H. G. Colombie, C. M. Griffeth, J. B. Mills (Victorian Fruit Marketing Association), J. M. Ward (Superintendent of Horticulture), E. E. Meeking (Senior Fruit Inspector).

Department of Markets.—H. Noel.

Other Victorians in attendance were:—Messrs. J. W. Bailey, W. H. Carne, G. W. Brown, W. A. Webb, E. I. Lawford, F. R. Mellor, C. Parnham, J. Barker, A. S. Harrison, K. Eagle, J. Ely, S. P. Cornish and A. Cameron (Ardmona), F. Cave.

An apology was received from Mr. E. Ross, Tasmania.

A cordial welcome to delegates and visitors was tendered by the Chairman (Mr. H. G. Colombie).

In officially opening the Conference, Mr. E. J. Mulvaney (Secretary, Department of Markets) apologised for the unavoidable absence of the Minister for Markets, Hon. F. M. Forde. Continuing, Mr. Mulvaney stated that the action of the Victorian Fruit Marketing Association in convening the Conference was deserving of the highest commendation. The value of all fresh fruit produced in Australia during the year 1928-29 was nearly £13,000,000, including an Apple production of £2,707,273.

The average annual value of Australia's fruit export trade was approximately £4,300,000, of which Apples represented £1,200,000. Last year the Apple production of the Commonwealth was about 9½ million bushels, of which 4¼ million bushels were exported, over 2½ millions being shipped from Tasmania. In the Commonwealth about 12,000 orchardists were engaged in the production of Apples and Pears. When consideration was given to the number of others in the industry its great importance to the nation was self-evident. The fundamental subjects concerning the fruit industry were markets, quality, publicity, and research. Only by organisation on national lines could these questions be satisfactorily solved. The National Fruit Council, while it existed, did valuable work Federal legislation in 1927 was not accepted by the growers.

"I am authorised by the Minister to say," stated Mr. Mulvaney, "that the Department of Markets will assist this Conference in every way possible to establish an organisation, and when the organisation has been formed the services of the Department will be at its command."

During the coming season, continued the speaker, the inspection staff would exercise rigid supervision over all fruit submitted for export. The Commonwealth Government would continue the advertising of Australian Apples and Pears in Great Britain. This advertising was being successfully carried on by Mr. A. E. Hyland. Research was being conducted by the Council for Scientific and Industrial Research and State Agricultural Departments. Last year inspection costs borne by the Markets Department were over £6,900. The demand for Australian Apples in U.K. had been increased by the publicity methods, which had cost over £37,000, half of which had been paid by the Commonwealth and the balance by the industry. The scientific research was being carried on without cost to the fruitgrower. The Commonwealth Markets Department was financially assisting the Queensland Government in sending Mr. Ranger, Queensland Committee of Direction of Fruit Marketing, to the East to report on trade possibilities.

A hearty vote of thanks to Mr. Mulvaney was carried on the motion of Messrs. N. Campbell (Tasmania) and J. B. Randell (South Australia).

Secretary.—Mr. R. E. Boardman was appointed Hon. Secretary of the Conference.

Commercial Travellers' Association.—A vote of thanks to the Commercial Travellers' Association for providing the room for the Conference and honorary membership for delegates was carried, on the motion of Messrs. Cave and Piggott.

It was decided that delegates be given 10 minutes in which to speak, visitors 5 minutes. Resolutions only to be moved by delegates.

Formation of Council.—Mr. Randell moved—"That in the opinion of this Conference it is advisable that an Australian Apple and Pear Export Association be formed."

This proposed organisation would be a Council consisting of accredited representatives from the several State Associations and a common policy could be agreed upon.

In seconding the resolution, Mr. Griffeth told of the resolution at Hobart favoring this Australian organisation, and the Victorian Fruit Marketing Association had, on request, drafted a tentative constitution to provide a basis for discussion.

Mr. Mulvaney said the Markets Department would welcome the formation of a representative Australian organisation.

An interesting discussion ensued, much interesting and helpful information being presented. The general line of the discussion favored an Australian organisation on the proposed lines. On a vote being taken, the resolution was carried by eight votes to one. A Committee was then formed to draft a constitution as follows:—New South Wales: Messrs. H. V. Smith and E. Johns; Victoria: J. B. Mills and C. M. Griffeth; West Australia: T. G. Sounness; South Australia: H. J. Bishop and J. B. Randell; Tasmania: N. Campbell and J. P. Piggott.

Export Regulations.—Plain Grade Apples.—Mr. Bishop submitted that it was reasonable that clean "plain" grade fruit—particularly Jonathans—under 2¼in., should be branded differently to "plain" grade. At present "plain" denoted undersized fruit, also fruit affected with excess spot and blemish. Mr. Randell moved—"That it be a recommendation from this Conference to the Markets Department that Jonathan Apples of 2⅛in. size of good color shall be included in the regulations for export under standard grade." Mr. Bishop seconded.

Mr. Campbell stated that in years of heavy production as in the 1930 export season, it would be better if no "plain" grade were exported.

Mr. Thomas stated that the varieties that were recognised in Tasmania as normally small for the purposes of the grading regulations were Crofton, Cox's, Yates, King Pippin, Pomme de Neige, and Scarlet.

Mr. Ward said that Victoria recognised Yates, Pomme de Neige and Cox's as normally small varieties.

Mr. Savage said that New South Wales let no Apples pass for export under 2¼in.

Mr. Randell said that he would willingly cut out the "plain" grade altogether provided that clean, well-colored and good-flavored Jonathans of 2⅛in. size could be included under "standard" grade. The motion was lost, six voting in favor and seven against.

U.K. Committee.—Mr. Piggott reported that after much negotiation a conference had been held in London, attended by 33 of the leading British fruit importers. These were willing to act as a committee to receive all the fruit from Australia and to present joint reports to assist in the fullest possible development of the trade. At the present time there were too many receivers in the United Kingdom and the weak holder brought down the market prices. Advices from individual receivers in Great Britain were liable to be misleading, but the reports emanating from a committee controlling the distribution of the whole of the Australian export would be of the utmost value. Continuing, Mr. Piggott stated that he could not give the names of the suggested thirty-three firms at this stage, but he would say that they were the substantial men of the trade and those who now had representatives in Australia. He was awaiting the report of the Royal Commission in Tasmania before any additional information could be disclosed. The principle, however, was similar to that now applying on the Sydney market with Tasmanian fruit, where a committee of selected agents was successfully operating. This committee met weekly, and were able to present comprehensive and valuable reports to the Tasmanian State Fruit Advisory Board.

The Chairman stated that the proposed formation of the U.K. Committee had his wholehearted approval. F.o.b. sales would not be interfered with in any way. This committee, however, would have the opportunity of making such regulations for its members as would assist both f.o.b. buyers and those in the consignment business to stabilise the market. Buyers did not necessarily want low prices, but they did want a stabilised market.

Mr. Sounness said that the f.o.b. sales formed the biggest part of the export from West Australia. With certain safeguards the formation of the overseas committee could do good.

Mr. Mills stated he was largely interested in the f.o.b. trade. He could quite see the possibilities for usefulness for the proposed U.K. Committee. It should be possible for this Committee to draw up a standard contract form in the same way as dairy produce and meat contracts had been devised.

Mr. Parnham considered the proposed U.K. Committee could perform much useful service. The small receiver was a curse to the trade.

Mr. Broadfoot said he had noted that more fruit sold in England at panic prices than at good prices last season.

It was unanimously decided on the motion of Messrs. Piggott and Randell:

> **"That in the opinion of this Conference, it is desirable to support the principle of a Committee of selling agents in the United Kingdom, and that delegates be asked to bring this matter before the next meeting of the Associations for ratification or otherwise."**

Grading Regulations.—Mr. H. V. Smith moved—"That in the opinion of this Conference the grading regulations should be revised and that Departmental officers be asked to review the regulations and to forward the result of their deliberations to each State organisation and later to the Australian Apple and Pear Export Council."

He submitted that the regulations should be drafted to suit commercial conditions. At present the "special" grade was rarely used, giving people abroad the opinion that we could not pack our top grade. The "standard" grade was a blend, it being 90 per cent. of special fruit with 10 per cent. of a slightly lower standard. If the Departmental officers were to revise the grades accordingly these could be carefully considered by the several State Associations.

Mr. Broadfoot seconded. He stated the grades were not "clear-cut" as were the grades in New Zealand and U.S.A. There were at least five or six variations possible in the "plain" grade, leaving doubt in the minds o buyers.

Mr. Davies suggested that the grades should not be altered, but that inspection should be tightened.

Mr. Thomas pointed out that the present grading regulations were a compromise. They were, however, reasonably workable. The "standard" grade was the commercial one. It was not desired that growers should deliberately include 10 per cent. blemished fruit, but that such 10 per cent. had been allowed for to provide for human error.

Mr. Meeking said that the trouble was not so much with the grading, but with transport, as too much of our fruit arrived in a deteriorated condition. He suggested that the growers' associations should draft their own regulations and submit them to the Department for consideration.

Some of the Delegates and visitors in attendance at the Australian Pear and Apple Export Conference, Melbourne, December 10 and 11, 1930.—(1) Mr. J. M. Ward, Supt. of Horticulture (right), enjoys a joke with Mr. C. J. Farnham. (2) Messrs. E. Johns and E. D. Butler (N.S.W.); H. G. Colombie (Vic., Chairman); W. R. Carne (Pakenham, Vic.). (3) Messrs. Neil Campbell, M.H.A., Tasmania, and E. E. Boardman (Secretary). (4) Messrs. A. Davies (Tas.), C. J. Farnham (Vic.), and L. Taylor (N. Tas.). (5) Messrs. J. B. Mills, J. Barker, F. R. Mellor (Vic.), and P. H. Thomas (Tas.). (6) Messrs. J. P. Piggott, M.H.A. (Tas.), B. Broadfoot, and H. V. Smith, N.S.W.

—Illustration by courtesy of "The Graphic."

The debate was adjourned, and subsequently Mr. Smith withdrew his resolution and Mr. Campbell moved—

> **"That as an Australian Apple and Pear Export Council is in course of formation, the Minister be asked to recognise this Council as the body whose function it is in consultation with Departmental officers, to advise the Minister on the subject of grading regulations, and that the Minister be notified that this Council would be prepared to consider the regulations at its next annual meeting in August at the close of the coming export season."**

Mr. Smith seconded, and the motion was carried unanimously.

Apple and Pear Export Association.—The Committee presented its report and a draft constitution of the Apple and Pear Export Association.

Mr. Griffeth moved:—

> **"That this meeting approves of the constitution as drafted and that the delegates here assembled are prepared to recommend its adoption by their several States."**

Mr. Piggott seconded, and the motion was carried unanimously.

It was further decided, on the motion of Messrs. Campbell and Piggott, that the Victorian Fruit Marketing Association be asked to place its services at the disposal of the new organisation until the first annual meeting.

Illness of Mr. Thompson.—The Conference learned with regret of the illness of Mr. H. M. Thompson, of the Department of Markets—one who in the past had been of great service at growers' conferences. It was decided, on the motion of Messrs. Ward and Thomas, that a resolution of sympathy be conveyed to Mr. Thompson, expressing the hope for his speedy and complete recovery to health.

Pear Export.—The desire was expressed for the three-quarter bushel case, Canadian type, to be included in the regulations for the export of Pears, in order to experiment with this case in the coming season. A sample of the case was submitted. It was decided, on the motion of Messrs. Griffeth and Mills:—

> **"That this Conference requests the Department of Markets to include in the export grading regulations cases and trays of standard length of 18in. and of standard width of 11½in. (inside measurements) for the use for any fruit which in the opinion of an inspector is most suitable to the depth of the case or tray."**

Cases and Timber.—Mr. Sounness said that much prominence had been given to the question of timber for cases and the type of cases to be used for the export of fruit. Western Australia, however, preferred the dump case and the use of redwood (karri) timber. He moved:—

> **"That this Conference recommends to the Markets Department that no alteration be made to the present regulations in regard to cases and timber until this body recommends otherwise."**

Mr. Davis seconded.

Mr. Piggott submitted that the question of the case was of minor importance: the principal thing was the quality of the fruit inside the case. The motion was carried.

Hardwood Timber for Cases.—Mr. E. W. Quinn, manager, Hardwood Millers' Association, attended, and while admitting there had been certain trouble in the past, there should be now no difficulty in supplying any quantity of seasoned hardwood cases for the export of fruit. A consignment of 100 cases of fruit to London in seasoned hardwood cases had been officially reported on as highly satisfactory.

Mr. Yelland, casemaker, said that seasoned hardwood cases could be made at the same price as the imported, and the use of these cases would do away with the necessity for wiring.

Mr. Ward stated that the hardwood sawmillers were themselves largely to blame for the present substantial use of the softwood cases. The irregularity of the hardwood cases supplied in the past and the loss consequent thereon had turned growers against the hardwood cases.

Mr. Griffeth said he used from ten to twenty thousand cases each season. Hardwood cases were unsatisfactory, and he had gone completely over to the softwood.

Mr. Piggott said that the Tasmanian hardwood was more suitable for cases than the imported softwood. He had no objection to Canadian softwoods, but the dumping of American softwood cases was undesirable.

Mr. Sounness spoke favorably of the W.A. hardwood (karri) for fruit cases.

Mr. G. Quinn (S.A.) said the South Australian hardwood was quite unsuitable; further the cases supplied from locally grown Pinus insignis were also unreliable. However, South Australia was now growing its own timber for softwood cases.

The Chairman said Victorian growers were very dissatisfied with the hardwood cases supplied, the evidence being that growers were willing to pay more for the Canadian softwoods.

Mr. Smith (N.S.W.) said that in New South Wales growers were using softwood exclusively. There were forests of Mountain Ash (hardwood) standing, but cases were not being made in this timber.

Mr. Savage stated that a recent trial shipment showed that fruit in Mountain Ash hardwood cases carried very well.

Mr. Quinn (Hardwood Millers' Association) said that they had been invited to attend the Conference by the Minister, and preferred to do so rather than go again to the Tariff Board. They did not intend, however, to be starved out of existence without an appeal to the Government.

Messrs. Quinn and Yelland were invited to attend the Conference again in the evening. This offer was declined, and on resuming in the evening delegates decided that they would stand together to prevent the compulsory use of any type of cases or timber.

Markets Department.—A letter was read from Mr. E. J. Mulvaney, Secretary, Department of Markets, giving a summary of the present regulations regarding grading regulations, timber for cases, etc., and pointing out that so far as the Apple exporting States (excepting Western Australia) were concerned, it would be of advantage if the Australian hardwood milling industry and growers themselves were to adopt the Canadian type case made from seasoned and dressed hardwood for export purposes in preference to the hardwood dump case, the imported softwood shooks and those made from imported softwoods.

Report on U.K. Marketing.—Mr. Mulvaney wrote stating that some months ago the Empire Marketing Board in London, through the Council for Scientific and Industrial Research, expressed a desire to co-operate in a close examination of the overseas marketing of Australian Apples, and indicated their willingness to meet the travelling expenses of a representative of the industry in Australia to co-operate with the Board's officers in such an examination.

It was decided, on the motion of Messrs. Piggott and Griffeth—

> **"That whilst appreciating the suggestion from the Empire Marketing Board as to the sending of a fruit representative overseas for the coming season, this Conference is of the opinion that this matter would be better deferred until the Australian and English Committees, now in course of formation, are actually functioning. Further, this Council would be very glad indeed to co-operate with the Empire Marketing Board in the sending of a representative at the earliest favorable opportunity and would like to keep in touch with the Markets Department in regard to this matter."**

Rough Handling.—Mr. Quinn (S.A.) reported that an Act of Parliament had been passed in South Australia, designed to prevent rough handling of fruit while loading ships. Inspectors had used their power with tact, and cases were now being handled much more gently on railways and in ships' holds.

Mr. Noel said a similar Act was in force in Tasmania.

Mr. Ward reported an improvement in the loading of fruit in Victoria.

Interchange of Inspectors.—Mr. Mills said that grading regulations for export fruit were interpreted differently in the different States. With butter export the interchanging of interstate inspectors had brought about a marked improvement and a uniform interpretation of the regulations.

Several difficulties were pointed out in regard to the interchange of inspectors for fruit export, and it was decided to ask the representatives of the Markets Department who were present to take a note of the discussion with a view to devising a plan for the uniform interpretation of the grading regulations.

1931 Export.—Preliminary reports regarding 1931 crops and export were indicated as follows:—

New Zealand.—800,000 bushels of Apples for export.

Tasmania.—Apple crop estimated at 2,250,000 bushels; probable export, 1,250,000 bushels.

South Australia.—Apple crop light, about 250,000 bushels. As this was insufficient for local requirements, there would be little or no export.

Victoria.—Crop 45 per cent. of normal: estimated quantity for 1931 about 1,500,000 bushels, of which about 300,000 would be exported. With Pears the estimated crop was about 600,000 cases.

New South Wales.—With a 65 per cent. crop, the quantities harvested would probably be 650,000 bushels Apples and 500,000 bushels Pears. The exports were likely to be about 20,000 cases.

Western Australia.—Thrips had reduced the crop in some districts. For the State the crop would be about 60 per cent. to 70 per cent. of normal, and the export about 500,000 cases.

Pleasant Dinner Function.

A COMPLIMENTARY DINNER was tendered by Mr. H. G. Colombie, President of the Victorian Fruit Marketing Association, to delegates and visitors attending the Apple and Pear Export Conference.

The after-dinner speeches were excellent, and the utmost harmony prevailed.

Mr. Colombie said that the statistician's figures showed that the sugar embargo added 4 per cent. to exports: on the fresh fruit exports of last season this was an unseen tax of £100,000. The extra duty imposed by Germany on Australian fruit added another £75,000. On these two items alone, growers were penalised to the extent of 8d. per bushel. He urged the necessity for more research work as regards soils, manuring, pollination, control of pests, thinning, pruning, etc., and suggested the formation of a research panel to co-operate with science workers.

Several toasts were honored with enthusiasm.

Mr. C. M. Griffeth, in a capable speech, proposed a toast to the Commonwealth Government. He stated preselection was an evil which opened the door to party manipulations.

Mr. Noel (Federal Department of Markets), in responding, told of the fine research work of Dr. Tillyard, also the investigations by the Council for Scientific and Industrial Research.

Mr. A. S. Harrison proposed the toast to interstate delegates. The present Conference, he thought, was unique and would do much permanent good.

Mr. F. Thomas, M.A., in seconding, said that although the States had been officially federated for thirty years, there was still the necessity for federal spirit in actuality. Growers should adopt the motto, "Solidarity for Ever." Competition was getting fiercer and our competitors were better organised than we were.

Pleasing responses were made by Mr. A. Davies, L. Taylor, J. P. Piggott, M.H.A. (Tasmania), H. J. Bishop and J. B. Randell (South Australia), T. G. Sounness (W.A.), H. Broadfoot and H. V. Smith (N.S.W.).

Much helpful information was conveyed by the several speakers.

Mr. J. B. Mills proposed a toast to the Overseas Shipping Representatives' Association, coupled with the name of the Chairman, Mr. Young.

Mr. G. W. Brown, in support, emphasised the importance of the closer co-operation of growers with the shipping companies to solve transport problems.

Mr. Young, in reply, said the interests of the shipping companies and growers were mutual. In their endeavors to carry fruit well, the companies had spent much money in research work. The Australian Oversea Transport Association had also performed good service. He appreciated the "Get together" spirit.

Mr. F. R. Mellor proposed and Mr. W. A. Webb seconded the toast honoring the Departmental officers. Cordial responses were made by Messrs. P. H. Thomas (Tas.) and G. Quinn (S.A.).

The Grand Australasian Championship Cup won by Mr. R. E. Fowler, was presented by Mr. Noel to Mr. N. N. McLean, on behalf of Mr. Fowler (Mr. Fowler being unable to attend owing to illness). Mr. McLean suitably responded.

The Victorian Packing Championship had also been won by Mr. Fowler. Certificates for expert packing were presented to Mr. T. E. Butler on behalf of the Peninsula Packing Co., Somerville, and to Mr. J. H. Lang, on behalf of the Harcourt Fruit Supply Ltd.

Mr. J. M. Ward (Superintendent of Horticulture), spoke of the improvements in the packing of Victorian fruit, and congratulated the winners of the cup and certificates.

Mr. C. J. Parnham (Vic.), and Neil Campbell, M.H.A. (Tas.), expressed appreciation of the services of Mr. H. G. Colombie, thus bringing to a conclusion a very happy function.

Export of Pears from Australia.

Temple Court, Melbourne,
December 12, 1930.

The Editor, "Fruit World," Melbourne.

Dear Sir,—The report in your issue of December 1 dealing with an address given at Doncaster is doubtless responsible for the numerous enquiries I have received for information, and as the subject is probably of interest and importance to others, perhaps you will insert the following in your next issue.

I shall only deal with the container and the marketing suggestions of the lecturer. His recommendations are plausible, but will only be accepted by the uninitiated, hence their being all the more dangerous. If those who are giving Australia a surfeit of nostrums alone suffered from their medicine, we could leave them to their fate, but, unfortunately, the repercussion of their misguidance is seriously felt by numerous unwilling victims.

Container.—The lecturer's recommendation of the "long flat" because it is distinctive, should be ignored for many reasons. I know that when I was overseas a few Covent Garden traders expressed preference for the flat, but the peculiar part was that this preference did not extend beyond a small district of Victoria, which seems odd. I also know that many more traders in Covent Garden and other parts of London, in Liverpool, Glasgow, Hull, Hamburg, Rotterdam, etc., preferred the Canadian type (with bulge) first, the dump second, and the flat last. The tray was liked by almost everybody, but was not considered essential because of the heavier expenses, except for the very best varieties. However, I maintain that any preference by traders is of no moment compared to the absolute necessity of ascertaining what shape and size is the best carrier from Australia, the condition of the fruit on arrival being of far greater importance for results. It will be noticed that later on the lecturer himself condemns his own earlier recommendation of the flat. It should also be remembered, when considering a container, that practically all Pears are now packed and sold by "count."

For some strange reason, the speaker confined his Australian comparisons with South Africa, but the cases are not at all parallel. South Africa is about three weeks from England, whereas Eastern Australian loadings take more than double that time, and for Pears this makes an enormous difference. We are learning more and more about refrigeration, but much more has yet to be learned, as is being continually ascertained by the scientists of the Cambridge Low Temperature Research Station. For instance, they believe that Beurre Bosc are particularly liable to core-breakdown if kept long at low temperatures, which disability cannot be so severe on S. Africans, etc. Then the varieties, and their respective quantities and sizes, from each country, are well-nigh incomparable; in fact, the lecturer himself recommends that some be not sent from Australia. Again, the presentation of the fruit is entirely different, but so is the cost. However, for the lecturer to make his own comparative averages in the grosso-modo manner adopted is grotesque and infantile. Facts are required, not self-colored imaginary results.

To judge from his remarks, he thinks Covent Garden the only market that matters, but either he wore blinkers or has acquired a false perception of the business, because Covent Garden has never even been the principal receiving market of imported fruit. The truth is that it only receives a very small proportion of the direct imports from overseas into Great Britain.

Some of his premises being unsound, his deductions and conclusions are valueless.

It is difficult to understand why he says Covent Garden dealt with 1,800,000 packages of S. African Pears during 12 weeks of February, March and April, because statistics show total exports at 992,235 packages, and as much of this never went near Covent Garden, his self-made estimate of 40,000 bushels weekly needs sad revision.

It is also difficult to accept his other self-made estimate of 5/9 average per tray of 24 or 28 and reconcile this with his other figures when he says the public pays average retail prices of 8d. to 1/- per lb., because it would entail retailers selling at a loss, especially after wastage, transport and expenses are added. As for sales at 8d. and more per Pear, it would indeed be interesting to know the total quantity sold at these prices in any one year anywhere.

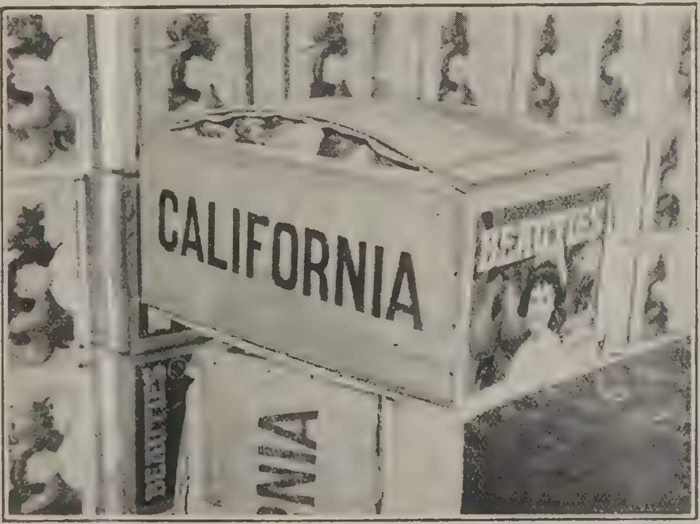
Marketing men will smile at the naiveté of the lecturer in multiplying his self-made value of four S. African trays and compare the result with another self-made value for an Australian bushel package. I saw, myself, sold at Auction some Tasmanian bushels at 28/- and 30/-; some South Australian half-boxes at 14/-, and some Tasmanian trays at 5/6, and none carried the heavy expense attached to S. African trays, so that the comparison is not always against Australia, as the lecturer so strongly endeavours to make out.

We are left to conjecture what credence to attach to his statement that the arrival in one week of 17,000 cases of Victorian Pears caused a chaotic market, because he gives no names, says nothing about the condition, etc. It is incorrect for him to say that when this fruit arrived there was no system to promote and regulate its sale, because the proper system has been in existence at every port and been availed of by many exporters for many years, but as he studiously avoids any reference to it, he must be unacquainted with marketing overseas. All the troubles he mentions can easily be overcome by using the services of the Federated auction brokers who regularly control markets and regulate supplies. Elsewhere, he talks of the advantages of organisation as if this did not exist overseas. He must wake up. The organisation has been in existence long enough; has, in fact, been copied by America; nothing better has been devised anywhere; it can be found at the fruit exchange of each port where Federated brokers sell at auction by well-regulated methods. Their services are being used more extensively every year by Australian exporters. It may interest the lecturer to learn that these Federated brokers handle the largest proportion of the fruit received in Great Britain from overseas. Why keep on playing blind man's buff?

His solicitude for organisation is praiseworthy, but it is a great pity he has not put it into practice by joining the lately created Victorian Fruit Marketing Association, consisting of growers and shippers whose objective it is precisely to improve all phases of marketing exported fruit, both here and abroad, because he is only depriving the Association of his knowledge and financial support both for himself and his fellow growers, but it makes others give their time and money for his non-contributory benefit. However, as he makes a general inference imputing malpractice to certain firms, I submit it is his duty to give the facts not only for the benefit of those engaged in the business, but also to clear the slur he has cast on the other firms whose integrity cannot be impeached.

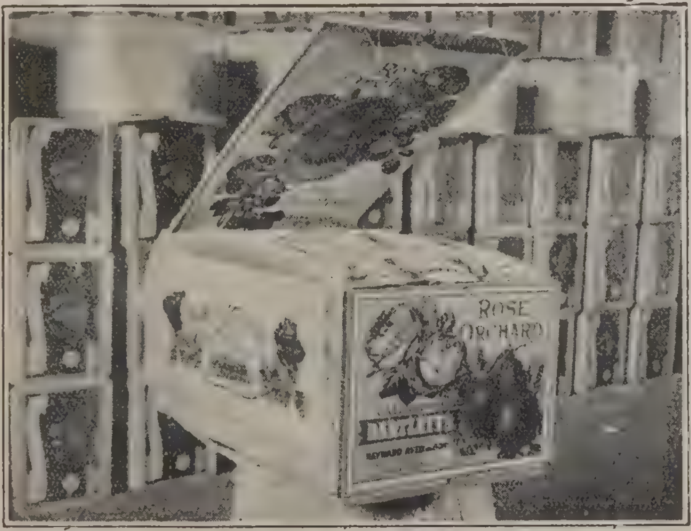
His further statement that "S. Africa, all Pacific Coast packing sheds and companies, also British Columbia, New Zealand, etc., handled their whole pack through about six agents" makes one conversant with the business rub his eyes. This is incorrect and grossly misleading. To my knowledge it is equally incorrect for him to say that "these agents working with the representatives of the exporters concerned decided what the fruit was to be offered at, and that alterations could only be made with mutual consent." All this requires proof or correction. His address had particular reference to S. Africa, and if he inferred that their Pears were so disposed of, I can only say that this is not so and hardly likely to be so. Values not only differ according to size, variety, quality, condition, etc., of each parcel, but there are even market variations of values for the same parcels during the same day, and clearly the representative could not be sitting at the same time in the office of each agent, nor could any of the employed salesmen make a buyer wait before confirming a sale until he had somewhere consulted a third party. The only practical way of doing so would be by sale through the Federated auction brokers, by prearrangement with the auctioneer. It is physically impossible for a representative to be on each distant market at the same time, so that he cannot attend to all the sales and at the same time examine all the fruit. It is even impossible for any one individual to see all the fruit that is landed in London alone, unless the quantity is small, in which case the cost of the representative would be very expensive. Experience has shown, by the

Presentation of American Fruit.



Attention is called to the regular and prominent bulge, showing how American Pears are packed. The corrugated cardboard pads, sides, tops and bottoms are plainly visible.

These cases had travelled over 3,000 miles by rail, in refrig. cars, and the fruit was in perfect condition. Note the wide cleats.



Note the fancy "liners" used. One is shown drawn down on the left-hand side.

Notice the fancy advertising cardboard matter underneath the lid. This is extracted by the retailer, who exposes it, well advertising the brand.

It will be noticed that cases are stacked on their sides, not top and bottom, so as not to interfere with the bulge.

Photos of Californian Pears taken by H. G. Colombie on New York Wharves way, that supervisors are not all the blessings they are imagined to be, as many exporters have learned to their cost.

Referring to the lecturer's remarks about Australian Pear exports, the quantity sent in 1930 was about 420,000 packages, mostly bushels, but they were very wisely not concentrated in Covent Garden, as otherwise the troubles he has alluded to would have been intensified.

By his remarks concerning the trade terms, "wet" and "wasty," the lecturer shows his ignorance of marketing. "Wasty" is self-explanatory, but the term "wet" has never had anything to do with drips from the grids. "Wet" means that the juice is percolating through the timber, whereas a wasty package may not show juice wet externally. Any package affected by drips from the grids is described as "damp" or "ship stained."

Contrary to the very serious allegation made by the lecturer, the descriptions applied are **always genuine** when so applied in the auction catalogues of the broker members of the Federation of Great Britain, and, in fairness to them, I trust he will retract his allegation in your next issue by specifically stating that his strictures did not apply to any of these brokers. These descriptions are always clearly printed in the auction catalogues issued to the buyers before sale, so that anyone, the lecturer included, could, and can verify beforehand the genuineness of the descriptions.

Referring to the "Orontes," the lecturer says she began unloading her Pears on May 29; as a fact, she began on the 24th, and Federated auction brokers' catalogues show they sold their's on the 26th. His explanation of his own parcel is unconvincing.

I was greatly amused by his statement: "If the thousands of English fruiterers knew where they could always obtain reliable supplies I am certain it would help immensely to improve prices." I can assure him they know their business, and where to get supplies, or else they go bankrupt, but the reliability of supplies is a matter for the exporter to see to. He quotes a case where a retailer paid a dealer 22/- for a case sold earlier on at Covent Garden at 14/-, etc. The remedy is so obvious it is incomprehensible why it is not suggested. Had the fruit been in the auction room of Federated brokers the retailer could have bought it through a commission buyer for the exact price at which it was knocked down (all prices being public and catalogued), plus a small commission of a few pence per case. This quotation, however, is unfair if meant generally; it is exceptional, but here is the other side. I know of several dealers who this year lost much money on Pears. The fruit looked alright when landed, and was sold at market quotations, but later, when the ice had worn off, the Pears were going off so rapidly that in no time they were valueless. The Federated broker paid the exporter the original price paid at auction, but, out of his own pocket made up part of the loss sustained by the dealer.

Regarding markets, the lecturer says "it was generally thought that Hull was the only other port worth considering, and that only for a small quantity, whilst Hamburg would take a few thousand cases at very payable prices." I sincerely hope that, for their own sake, exporters will, in future, enquire about marketing from the people who really know something about the subject. I don't go to a vet. to have my teeth seen to, or to an undertaker to draw up my will. Truly, a little knowledge is a dangerous thing, and a costly business into the bargain, for those who are misguided.

One wonders why Glasgow, Liverpool, Manchester, Rotterdam, etc., are left out. By this mail I have a Glasgow circular showing that on one day there were for sale at auction by the Federated brokers over 10,000 cases of American Pears, another from Rotterdam offering 6,300, with another 5,100 for the next sale, whilst Liverpool regularly receives thousands of packages. America has exported from August to end October well over 1,000,000 boxes, not trays, the bulk to Europe, the largest portion of which has gone to Liverpool. Liverpool catalogues recently received show that the seven Federated brokers offered at auction in their sale room over 83,000 bushels of Apples and over 16,000 bushels of Pears from America in one day, without creating chaos or confusion.

The lecturer makes much of the London season, etc., but it is well known by marketing men that prices (contrary to the mistaken belief held in Australia and usually propagated by men who know nothing of the business) are entirely regulated by the provincial trade, and that London, despite its large population, has not the slightest influence upon them. If the country trade is bad, prices fall, and no amount of London demand can hold them together.

All agree with the lecturer that improvements are needed, but they are mostly required at this end. Many are engaged in the task, but his recommendations are not sound enough to bring about the desired change. What is required is something really practical, based on irrefutable facts and unassailable knowledge; the latter we will obtain from the Committee of Traders formed in U.K., only provided, however, that exporters agree to be guided by their recommendations.

Finally, the lecturer's case is entirely based on suppositious figures from which he draws the definite inference that Australia should copy South Africa, the following is, therefore, interesting:—The Empire Marketing Board in reviewing this season's deciduous fruit exports from South Africa says: "The season has been good from the point of view of volume and quality, but has been far from satisfactory to growers as regards prices."

The lecturer has given a copious narcotical dose of imaginary quotations and comparisons. I have, in my office, to be seen by anyone, numerous circulars showing daily traders' quotations. I quote a few:—During February, general quotations for S. African W.B.C. were round about 2/6 to 3/- per tray, 4/- to 4/6 for half-boxes, and 9/6 to 14/- for boxes (some wasty 3/- to 6/-), according to grade or count. There was a slight improvement in mid-March, trays being 3/4 to 3/7.

Victorians were on the market at the end of April against South Africans.

Note comparisons:—

Boxes.	S. Africans.	Victorians.
Josephines	16/–	17/– to 21/–
Keiffers	8/3 to 12/–	10/– to 11/6
W.N.	13/–	13/6
Mid-May supplies:—		
Josephines	16/–	15/– to 16/6

On May 16, the six Federated London auction brokers offered 11,395 packages of Victorian and South Australian Pears, and a few South Africans, without causing any chaos to the market. Quotations:—Victorian and South Australian: Boxes B.B., 12/- to 16/-; Howell, 12/- to 14/3 per box; half-boxes B.B., 7/3 to 8/9; Jos., 6/9 to 9/-; Comice, 8/6 to 11/6 per half-box. For the few South Africans: Josephines, 13/- to 14/- box.

End May, S. African W.N. 14/- to 15/-, Victorian 15/- to 15/6.

These are genuine, not imaginary, quotations and comparisons. Your readers can judge and draw their own conclusions.

Yours faithfully,

H. G. COLOMBIE.

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Correct Root Stocks Increase Yields and Reduce Expenditure on Pest Control and Manuring.

Valuable Address at Somerville, Vic., by R. G. Hatton, M.A., Director East Malling Research Station.

UNDER THE AUSPICES of the Victorian Fruit Marketing Association, a meeting was held at Somerville on December 19. Mr. H. G. Colombie, who presided, introduced Mr. R. G. Hatton, M.A., Director of the E. Malling Research Station, Kent, England. Associated with Mr. Hatton were Mr. J. M. Ward (Superintendent of Horticulture), Mr. H. W. Davey (Chief Orchard Supervisor), Mr. F. M. Read, M.Ag.Sc. (Horticultural Research Officer). There were present growers from local and surrounding districts.

Mr. Hatton won the confidence of all present by his pleasant manner and easy conversational style of giving an address. He stated he was a grower as well as an investigator. He had come to make contact with horticultural administrators and investigators, and to learn, not to teach; he was visiting Australia and other parts of the Empire under the auspices of the Empire Marketing Board. This Board took the very broadest view of their terms of reference—not simply the final act of marketing, but also the production and presentation of the right goods so that the final act of marketing would be more satisfactory.

At an agricultural research conference held in England in 1927, it was realised that there was in the Empire a tremendous loss of energy. Research workers were operating more or less as units, and their work needed to be co-ordinated. East Malling had become the clearing house—the Imperial Bureau of fruit production, which belonged as much to Australia as to Raratonga or any other part of the Empire.

As regards the work at East Malling, detailed horticultural investigation work really commenced some twenty years ago—in 1911. Fruitgrowers in England felt they did not know enough about their fruit trees. With apparently similar cultural conditions there were both failures and successes, what was the cause of the failures? In Kent, 25,000 acres were under fruit, individual trees standing side by side and given the same treatment behaved very differently, showing remarkable differences in height, spread, wood growth, fruit production, resistance or otherwise to disease.

It was determined then to make an intensive study of what was really an exact science. The growers decided to have a research station, and they supplied the initial finance. Finally, after several deputations, the Government agreed to a grant provided the growers found a substantial sum. He would emphasise the fact that it was the growers who determined on this research station, and who by their persistence finally brought it into being.

Root Stock Question Fundamental.

They decided to deal with fundamentals, commencing with the root stock question. In Australia, continued Mr. Hatton, he had noted the very large use of the vegetatively raised Northern Spy stock, because of its blight-proof qualities. When commencing their research it was noted that English trees were worked on seedling stocks—the seeds apparently having been obtained indiscriminately, consequently, when budded or grafted, the trees were of varying sizes and differing capabilities. Some trees bore at the rate of 55 tons per acre, neighboring trees eleven tons per acre. Why the smaller quantity?

Tests were conducted with stocks for Apples, Pears, Plums, Cherries, etc. Seedling stocks were discarded, and a commencement made with vegetatively raised stocks—raised from cuttings or stools. Owing to climatic conditions there was no menace from woolly aphis on the roots. As a result they now had at East Malling a range of stocks, which, when budded, would produce trees of varying potentialities—trees differing in size, habits of cropping, earliness of bearing, and it was possible to alter the time of blossoming, retarding or hastening the blossom ten days either way. Some stocks were distinctly resistant to black spot infection.

Trees side by side on different stocks showed variations regarding manurial requirements. Some needed manures to produce crops, others produced crops regularly

without the need for manures.

It was now possible to plant an orchard with trees which would come into full bearing normally, also to plant "filler" trees between the permanent ones, these "filler" trees coming into bearing in three or four years time, and which could be taken out to allow the subsequent full development of the permanent trees. The variety "Lanes Prince Albert," was sometimes used as a "filler" tree. This was a culinary Apple, in habit of growth and cropping, not unlike the Jonathan. Worked on a particular stock this variety had produced 1,150 bushels per acre in the seventh year. On another stock the crop was only 112 bushels. In Germany he had noted Apple trees growing on very little trees—planted like Gooseberry bushes, very closely, and big crops were harvested. The point to be noted was that growers could plant with certainty for different purposes, the root stock being the deciding factor.

Bigger Crops per Acre.

During his stay in Australia, Mr. Hatton said he had gained the impression, that as regards trees on Northern Spy stock, which he considered was a semi-dwarf stock, growers had the idea that trees should be planted 20 ft. apart. It would seem, however, that on certain soils, double the number of trees per acre could be safely planted, thus increasing the production per acre without increasing the cost of cultivation. "If you cannot get a bigger price for your fruit," continued the speaker, "you can at least obtain a bigger crop per acre. With Pears, Plums and Cherries, the same principle operated, and the variation is even more dramatic."

With Peaches and Plums it had been noted there was definite incompatibility between some stocks and varieties. Varieties on certain stocks became sickly, and dwarfed, others vigorous and very vigorous—and even with the present increase of knowledge, nature had a way at times of playing tricks.

Some varieties of Apples definitely did not thrive on particular stocks. This suggested to him that some varieties might not necessarily do well on the Northern Spy stock. It was a matter for patient investigation. All he could say was that if Australia had, in the Northern Spy stock, one that was universally satisfactory, this country was indeed fortunate.

Mr. Hatton stated that he had spent several years in a commercial nursery, and knew the difficulties of the trade. Growers would have "fashions" in fruit trees, just as the ladies had fashions in hats. Growers should appreciate the difficulties which confronted nurserymen. In England the nurserymen were co-operating very closely with the E. Malling Research Station. As a grower—he had 80 acres under fruit—he would say he was willing to pay the nurseryman a bigger price for his trees for planting, believing that the final results would justify the increased price.

Root Stocks Affect Manuring.

It had taken them a long time to arrive at their present stage—it was not necessarily the biggest tree which produced the best returns. By working buds on certain stocks it had been noted that over a period of ten to twelve years no manure had been necessary. Yet the same variety, on another root stock, required heavy feeding from the first. Every detail had to be watched from the "build-up" of the tree on different root stocks —pruning, cultural methods, manuring, etc. It was now possible for an experienced observer, on going through an orchard, to tell by the symptoms, what treatment was necessary, and very often in what respects the soil was deficient. The symptoms included blossom bud formation, blossom drop, fruit drop, etc.

He had known of instances where growers had paid big bills for supplying phosphates to the soil. Yet the trees had not required this kind of manure. Other growers would apply a complete manure and still the trees would not respond sufficiently. The fact remained that it was possible to diagnose the case to determine what the soil needed.

The same thing applied to spraying. Some trees would be injured with lime sulphur spraying. Some trees retained their leaves under lime sulphur spraying, with others there was considerable leaf drop. The root stock had a great bearing on this matter: it was possible to determine the correct root stock and the correct manurial programme for securing the highest possible crops of clean fruit. Potash had been found very valuable on many types of English soils.

Research work had indicated that many adjustments in cultural practice were needed. The trees had to be watched very carefully and studied from all angles. This work was very difficult for an individual grower to undertake. The work needed to be done scientifically, when every factor could be definitely studied. By scientific research it was possible to increase the crops per acre and to reduce the cost of production.

Cold Storage.

Mr. Hatton said that some interesting experiments were being conducted at East Malling. Dr. Kidd had been working successfully on Apple storage problems. In order, however, to secure exact results, it was necessary for all the factors to be taken into consideration, including root stocks, pruning, nutrition, maturity at time of picking, etc.

As these controlled factors were in operation at East Malling, the Empire Marketing Board had built there the model of a ship's hold to contain about 150 tons of Apples. The various cold storage factors were under control—temperature, humidity, also the concentration of carbon dioxide. Then a jacket was provided to control external temperatures to simulate a ship going through the tropics. With the known history of the fruit before cold storage, the fruit was thus being intensively studied under conditions similar to those met with on say a journey from Australia to the United Kingdom.

Root Stocks at Burnley, Vic.

Mr. Hatton stated that the various types of root stocks in use at E. Malling had been introduced into Victoria, and Mr. Ward, Superintendent of Horticulture, was having these tested at the Burnley Horticultural Gardens, he further stated that the Victorian Department of Agriculture kept in close touch with the work carried out at East Malling, and therefore knew exactly what was going on.

Mr. T. G. Tyler stated he had used superphosphates without any appreciable benefit. He asked the speaker: (1) as to the usefulness of potash to increase the coloring of red Apples; (2) a remedy for biennial cropping; (3) was it possible to correct black spot through root stock?

Mr. Hatton replied that potash was of value on English soils, but the same might not apply here. In England, when using highly nitrogenous manures, the fruit lost color. The use of potash induced color, but there was a secondary effect. The use of the potash on top of nitrogen produced extraordinarily fine foliage, thus giving greater shading, decreasing the color of the fruit. Under conditions at East Malling, it was found desirable to decrease the nitrogen. As regards biennial cropping, this was, he believed, mainly a matter of nutrition. Some root stocks, however, showed a greater tendency towards biennial cropping than others.

The most practical suggestion was that of taking the blossom off alternate branches in years of heavy blossom. Growers should adjust their pruning according to the state of the tree. Before the on year, growers should prune out much of the blossom. Pruning, however, was distinctly a local matter.

At East Malling it had been demonstrated that certain root stocks produced trees which were distinctly resistant to black spot—one of the worst of the troubles of English fruitgrowers. Research on this subject should produce valuable results in Australia.

Several other questions were asked and answered.

Empire Marketing Board Thanked.—Mr. J. W. Bailey (Narre Warren), moved that a vote of thanks be sent to the Empire Marketing Board for the fine work it was doing on behalf of fruit producers. The visit of Mr. Hatton was greatly appreciated.

Mr. A. S. Harrison (I.F.M. Co.) seconded. The work of the Empire Marketing Board was much better understood since the visit of Mr. Hatton. The motion was carried unanimously, with applause.

Thanks to Mr. Hatton.—Mr. G. W. Brown (Merricks) proposed a hearty vote of thanks to Mr. R. G. Hatton.

Apart from the valuable information conveyed, Mr. Hatton had inspired the industry to develop more experimental work. "The time has come," continued Mr. Brown, "when we must tackle these problems ourselves. Instead of people talking of tariffs and bounties, more should be heard of fundamental research work." He congratulated Mr. Hatton on the fine work being conducted at East Malling.

Mr. C. M. Griffeth (Two Bays Nurs. & Orchard Co.) seconded. He said that the Northern Spy stock had proved to be a good one. Nevertheless, the industry would welcome any possible improvement. Research work was certainly needed. It was evident from the remarks of the speaker that evening there was an immense amount to be learned regarding the fundamentals of the fruit industry.

The motion was carried with hearty applause, and Mr. Hatton suitably responded.

Packing Houses in Queensland.

QUEENSLAND HAS AT LAST entered the packing house movement by the establishment of packing houses in the Stanthorpe district and in two of the citrus districts.

Efforts made in the past to establish packing houses in Queensland have not met with the success the ventures deserved, but it is hoped by the more progressive growers that the packing house movement now successfully started will continue to grow and prove the benefit to the Queensland growers that it has to the growers in the southern States.

The Stanthorpe district was the first to make a move in the establishment of a central packing house. Opinions were very divided on the question, and the services of Mr. Jas. H. Gregory, who had just come from Victoria to Queensland, were requisitioned by the growers to give a series of addresses throughout the district. Great interest was shown in these addresses, members of both sexes attending. A guarantee as to supplies to a shed was then asked for, and the particular centre around The Summit was selected to erect the packing house. The finance was obtained from the deciduous section of the Committee of Direction of Fruit Marketing, and the packing house was treated as an experiment for the whole district. The services of Mr. L. S. Adams, of Somerville, Victoria, were secured as manager.

An up-to-date building was erected at a cost of £480, and a "Lightning" grader, roller conveyors, nailing-down press, and stamping equipment installed at a cost of approximately £2,250. Delay in receiving the plant caused a late start to be made, but encouraging results soon started to show many favorable reports from agents in Brisbane and Sydney being received.

A consignment of fruit for the East (comprising about 2,000 cases of Granny Smith and Dunn's Apples) was packed and proved very satisfactory in every way. The fancy label was an attractive feature of the general "get-up" of the fruit.

The cost of packing and despatching compared very favorably with southern—costs being 2/2 per case for fruit over 2¼ inches in diameter, wrapped and packed, woodwoolled, labelled, and consigned. As the case cost 1/1½, the other cost of 1/0½ was low. At this cost per case, operations were carried on at a slight profit, and the venture would have had a credit balance on the season's operations but for a hailstorm that destroyed about 7,000 cases of first-grade fruit intended for the packing house. This stopped the requisite quantity required to cover the overheard charges from being supplied.

One of the big gains on the market was the confidence shown by agents and buyers that the fruit fly had been eliminated.

A flat rate in the returns of account sales was also a feature freely commented upon by growers. Following on the success of the Summit packing house, other centres are considering the erection of sheds. Amiens, a part of the soldier settlement at Stanthorpe, are trying to get enough fruit to start, but bad roads and a none too heavy crop are factors that will possibly stop the erection of a packing house on the settlement this season.

Two Citrus Packing Houses.

FOLLOWING ON THE SUCCESS of the deciduous packing house the citrus growers became very interested in the packing shed system, and numerous meetings were held at Byfield, Palmwoods, Montville, Mapleton, Flaxton and Tambourine Mountain. Of these centres only two districts followed the matter up and conducted packing houses.

Mapleton, with a limited support and a small guaranteed supply, could not see their way clear to erect a shed, but were able to go ahead with operations for the season owing to the generosity of Mr. J. R. Morris, who lent his shed and equipment for the season's operations. This shed was in charge of Mr. S. Gregory, of Victoria, who had been associated with the Peninsula Co-operative Fruitgrowers' Association at Hastings and Somerville.

The results were of a very satisfactory nature, and the growers are intending to erect an up-to-date packing house for the coming season. The venture was financed by each supplier paying a levy into an operating account, such levy being returned at the end of the season, any loss to be made up by the suppliers pro rata, according

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to the amount they had packed. Any profits on the working charges were to be paid to the suppliers pro rata to supplies.

A charge of 7d. was fixed for packing, handling, consigning and supervision, and at the end of the season's operations it was found that this had more than covered expenses, notwithstanding the handicap of the small supplies handled the first month. The packing house handled approximately 3,500 cases, comprising the late varieties.

It is expected that next season the pack will be about 10,000 cases. Arrangements are now being made for the erection of a new building, and up-to-date equipment capable of handling 25,000 cases in a season.

The most encouraging feature of the season's results was the confidence of buyers in the output being free from fruit fly and of a standard pack that enabled them to buy without inspecting the fruit. Owing to the lateness of the season it was impossible to get a fancy label, but growers expect to go in for labels next season.

The second citrus packing house to be established was at Mt. Tambourine. Unfortunately, the marketing of the fruit clashed the last week with southern consignments, and prices were not as good as it was hoped to realise.

This packing house was erected by working bees of growers, the money for timber and plant being advanced by the Committee of Direction. The C.O.D. is doing a fine work in supporting the packing house system, a policy which is not getting the support it deserves in some of the larger districts on the North Coast.

The Bowen Tomato-growers are also discussing schemes to put their output on a better basis.

Stanthorpe Apple crop prospects:—Delicious, light; Granny's, medium to heavy; Jons., light to medium; Gravensteins, light.

Fruit clean and growing well.

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Cheeriness is a thing to be more profoundly grateful for than all that genius ever inspired or talent ever accomplished. Next best to natural, spontaneous cheeriness is deliberate, intended, persistent cheeriness, which we can create, can cultivate, and so foster and cherish that after a few years the world will never suspect it was not a hereditary gift.—Helen Hunt-Jackson.

Tasmanian Fruit Crops.

Coming Season's Prospects.

Apples Anticipated at 2,625,000 Bushels; Pears, 240,000 Bushels; Apricots and Plums, light; Berry Fruits, Heavy.

THE TASMANIAN State Chief Horticulturist, Mr. P. H. Thomas, is now in receipt of information from all the principal fruit-growing districts relating to the crop prospects for the coming season.

Apples.—Following the good crops of last season, it was generally anticipated that Apples would be somewhat light in most districts. Ideal weather conditions during the blossoming period, however, have resulted in a very fair setting of fruit, details of which are set out below.

Varieties.—Promise of a full crop of Sturmers is evident in almost all districts, whilst Cox's, Jonathan and Scarlet are also good generally, though the latter variety is somewhat patchy. Medium crops of Alfriston, Ribston Pippin, and Tasma (Democrat), are promised, the last-named variety giving promise of a full crop in some districts. French Crab and Cleo. are generally poor, only a few districts showing an average setting. Of the remaining commercial sorts, Crofton, Dunn's and Granny Smith are medium to good, and Delicious and Five Crown poor.

A recent frost did considerable damage in some parts of the Derwent Valley, Mountain River and Glen Huon districts, but the areas affected are not extensive, the injury on such is estimated at 50 per cent. to 75 per cent.

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The dry weather conditions experienced throughout the spring have checked the development of black spot up to the present, and only a little has been noticed on the fruit. Mildew is prevalent in some districts on the older leaves, though shoot infection is comparatively scarce.

Summarising the reports and estimates received for the State, it would appear that if conditions are normal for the remainder of the growing season, a 70 per cent. crop should be harvested. Taking the normal yield as 3,750,000 bushels, present prospects would indicate a yield for the 1930/31 season of about 2,625,000 bushels.

Pears.—Favorable weather conditions during the blossoming period have given a very fair setting of fruit in almost all districts, and the crop is likely to be in excess of last year's yield.

Varieties.—Josephines promised a yield slightly above normal, whilst Beurre Bosc and Winter Cole are both likely to give good crops. Williams are good in some districts, but very poor in others, and will be below normal. Winter Nelis is also below normal.—Most other varieties give promise of a fairly good crop, though spot is appearing on Clairgeau in some areas.

Judging from the reports received, and personal observations, an 80 per cent. crop should eventuate under average seasonal conditions. If the normal crop is taken at 300,000 bushels the present prospects would indicate a yield of about 240,000 bushels.

Apricots.—Following the heavy crops of last year, only a light to medium crop of Apricots is expected in most districts. Fruit is likely to be of first-class quality, and little shot-hole has been noticed up to the present. Taking the normal yield of Apricots at about 120,000 bushels, a crop of about 60,000 bushels is probable, the lighter crops being offset to some extent by the increased size of the individual fruits.

Plums.—Although blossoming was good on most varieties, the set was poor, doubtless owing to the weakened condition of the trees following last seasons heavy crops. Golden Drops and Gages are generally light to very light, whilst Prune varieties are medium to good in some districts.

It is not possible to obtain reliable estimates of this crop owing to the small scattered areas under cultivation.

Berry Fruits.—Favorable weather conditions at blossoming time followed by the recent rains should result in good crops of Currants, Raspberries and Loganberries. Gooseberries are generally fairly heavy, and many Strawberry beds are ripening good crops: the prevalence of weevil last season has had a serious affect on many young beds in the Channel district.

Kingston (22/11/30).—Most of the orchards are looking well, and appear to be fairly free from black spot. The principal fruits grown in this district are Apples, Pears, Plums and berry fruits. The chief varieties of Apples—Sturmers, Jons., Cleos., Tasman Pride, Dem., S.P.M., and other varieties on a smaller scale.

The crop is much lighter this year, and I consider this season's crop fully 30 per cent. lighter, compared with last year's crop.

Pears are patchy, and Plums fairly heavy, and small fruits are looking well, but many growers are disheartened owing to the poor prospects facing them as to the disposal of their fruit.

The breakdown of the market for pulp in the English market, owing to the dumping of surplus fruit from European countries, is having a very serious and harmful effect on the growing of small fruits in Tasmania.

Very little new developments have taken place during the past 12 months, owing to the ruinous returns received for overseas shipments, many growers are in straightened circumstances, and altogether it has been one of the most disastrous seasons in the history of overseas export.

Strange to say, very little more fruit was cool stored than last year, with a light crop. The Port Huon Fruitgrowers' Co-operative Association have extended their cool stores at Port Huon to accommodate over 100,000 cases of fruit.

Growers are looking forward to the report of the Royal Commission, set up by the Tasmanian Government to enquire into the conditions of overseas export, in the hope that an improved system may be brought about, for the benefit of all concerned.—B. J. Pearsall.

BUD DEVELOPMENT.

To the Editor, "Fruit World."

Sir,—Re remarks of Rodney Fowler about the need for research work on irregular cropping of trees, and determination of growth period when fruit buds develop, the Council for Scientific and Industrial Research might be induced to take an interest in this matter.

At their Merbein station, under Mr. A. V. Lyon, M.Sc., research along these lines has been more or less done, to the extent that it has been definitely laid down that fruiting buds on Sultana vines develop in November for the next year's crop.

When the tree buds develop is a matter of conjecture. The observations of a practical grower lead one to believe that Apricot fruiting buds develop after the crop has been harvested, and an irrigation given them before leaf fall has this effect (a good rain would have the same effect). Apricot crops in this settlement are good where an autumn irrigation has been given, and are light where this has not been done.

Lack of soil moisture induces a premature leaf fall, and the fruiting buds do not develop, whereas an irrigation late in the season enables the tree to keep its leaves and mature the fruiting buds. It is a practice with many growers to give the trees a "kick" with a 1 cwt. sulphate of ammonia dressing with this irrigation, for the very purpose of helping the tree to mature buds that may not otherwise develop.

Yours faithfully,

OSCAR WEST.

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SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

The monthly meeting of the Executive Committee of the South Australian Fruit Marketing Association was held at Adelaide on November 28. Mr. H. J. Bishop was in the chair, and there was an excellent attendance of members.

Packing Pears.—Mr. F. B. James, on behalf of the sub-committee appointed, submitted a partial report in connection with this matter, but stated the sub-committee had not yet come to an unanimous decision, and a further meeting would be held shortly to give further consideration to the reports and information they had received, and it was hoped that the sub-committee would be able to make an unanimous recommendation to the next meeting.

Crop Prospects.—The general summary showed that the crop of Apples and Pears would probably not exceed 20 per cent. of last year's figures.

Pear Shipments.—In view of reports received that canners would not be preserving Pears next season, it was decided to endeavour to obtain space for a Pear shipment about the end of January. Delegates do not anticipate any difficulty in obtaining sufficient fruit to fill a small chamber.

Melbourne Conference.—Advice was received that the Melbourne Conference had been deferred until December 10. The agenda was discussed by the meeting, and various additional items were suggested as desirable for inclusion, particularly in regard to grading regulations, plain grades, and freight rates in regard to half cases of Pears. It was also suggested that where special prizes are given such as the prize given by the Orient Shipping Company for the best four cases of fruit, that fruit should be taken at random by the inspectors at the port of shipment rather than from a special pack made solely for exhibition purposes.

BLACKBERRY DESTRUCTION.

The following inquiry was received from Echunga (S. Aust.):—"I have read about sodium chlorate killing ragwort in New Zealand; as I have a lot of Blackberries, would sodium chlorate kill them?"

Reply.—Our experience with treating Blackberries with sodium chlorate is that it kills all of the above-ground growth, and only a few weak shoots are sent up from the old crowns, and that a second application destroys most of these. We have been using a 5 per cent. solution, i.e., 1lb. of sodium chlorate in 2 gallons of water, which is sprayed on to the plants so as to wet all the growth. After seeing the results of our original experiments at Williamstown the owner of the property immediately ordered 1 ton of the material for the destruction of this pest. Sodium chlorate is obtainable from the Hardie Trading Pty. Ltd., Currie-street, Adelaide, and from the Cresco Fertilisers Ltd., North Terrace, Adelaide. (Reply by Mr. W. J. Spafford in S. Aust. Journal of Agriculture.)

NEWS AND NOTES.

Central stationary spray plants are being more largely used in New Zealand, and those who have these plants installed speak favorably of their efficiency and economy.

Firepots, burning crude oil, proved successful in New Zealand last spring in frost protection.

SOUTH AUSTRALIAN PRODUCE IN MELBOURNE.

125,000 Half-cases Tomatoes Marketed.

Growers 100 Per Cent. Loyal to Association: Improvements In Railway Transit Needed.

Report by C. W. McRostie, Market Representative, South Australian Fruitgrowers and Market Gardeners' Association.

IN THE SEASON just closed, 125,000 half-cases of Tomatoes have been consigned to the Melbourne market.

Owing to the downward trend of price of primary products and owing to the economic depression and consequently the reduced purchasing power of the public, it was anticipated at the commencement of the season that the price would be comparatively lower this year than the previous years.

A considerable number of glasshouses were erected after the very successful season last year, and consequently the planting was a record one. The first consignment arrived in Melbourne on August 20.

The maximum price received during the season was 26/- per half-case, with a few special lines bringing 30/-. consignments were comparatively light until November, when record consignments were received. On November 12, 12,000 cases arrived. Unfortunately, very cold and wet weather was experienced at this time, which caused a collapse in the market and prices fell to the minimum price for the season—8/- per half-case.

Transport Improvements Needed.

Despite the effort made by the South Australian Executive in co-operation with the railway authorities to obviate over-heating of fruit in transit, the waste caused this year has been heavier than previous years. This trouble was in evidence, especially on the train which leaves Adelaide on Saturday and which only arrives in Melbourne on the following Tuesday. Efforts will be made before the next export season to arrange for the use of more suitable freight cars. Growers have this year lost hundreds of pounds owing to the fruit arriving in a "boiled" condition.

Growers 100 Per Cent. Loyal.

One pleasing feature of the season has been that the growers have been 100 per cent. loyal to their organisations—not one case has been consigned to non-accredited agents.

Through the operation of the Association growers have benefited considerably with the bulk loading freight concessions, and payment of exchange on cheques.

The system of price fixation has also worked satisfactorily, especially on falling markets and during glut periods.

Early in the season competition was received by the arrival of fairly heavy consignments from Western Australia. However, owing to the difficulties of successful transport over such a long distance, the consignments from the West frequently arrived in a very bad order, and in the main the prices were very little affected by this competition.

After the consignments from the West ceased the arrival of competitive lines was almost negligible until the arrival of locally-grown Tomatoes from Koondrook, Echuca and other districts. It is to be regretted that the

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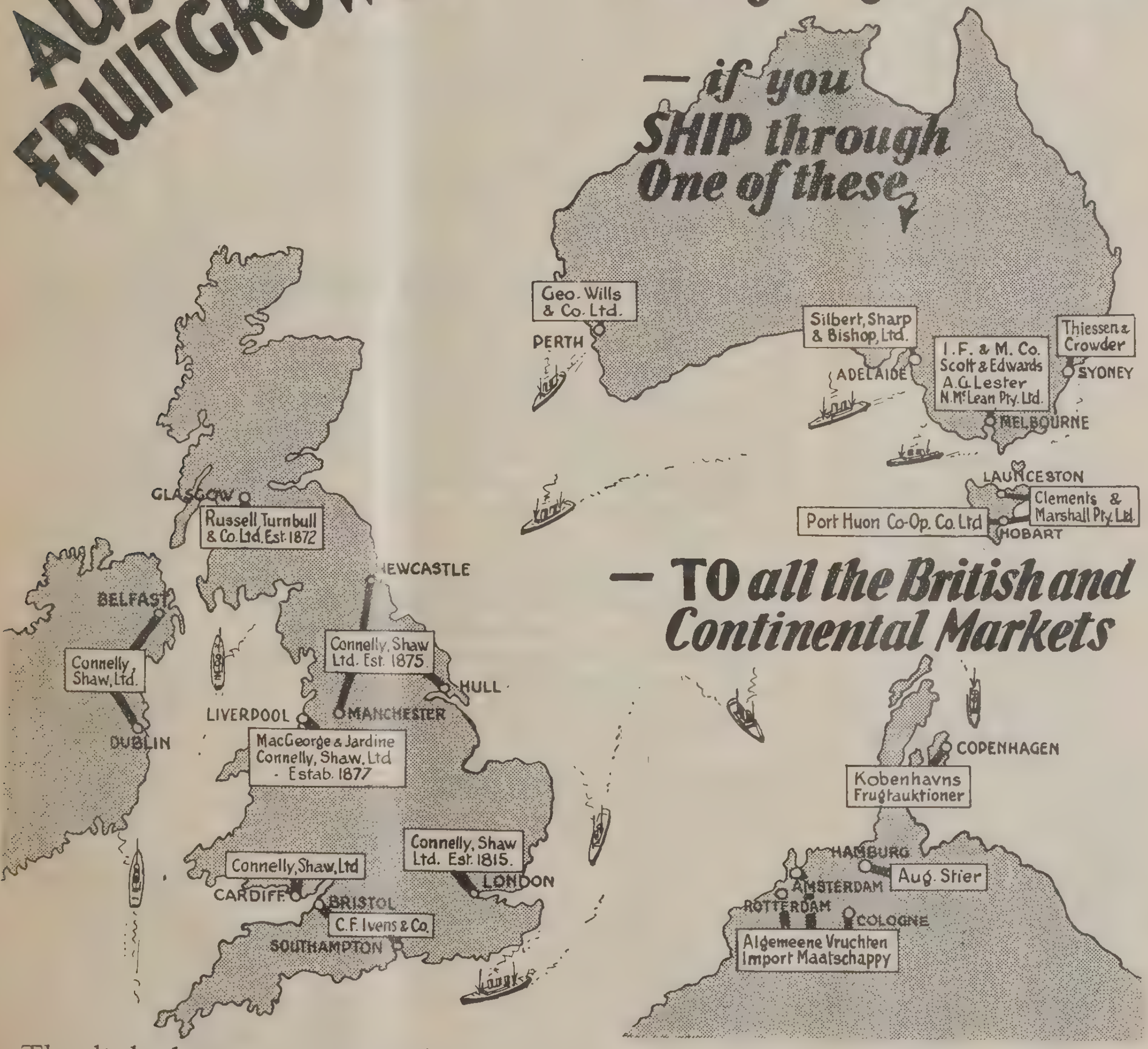
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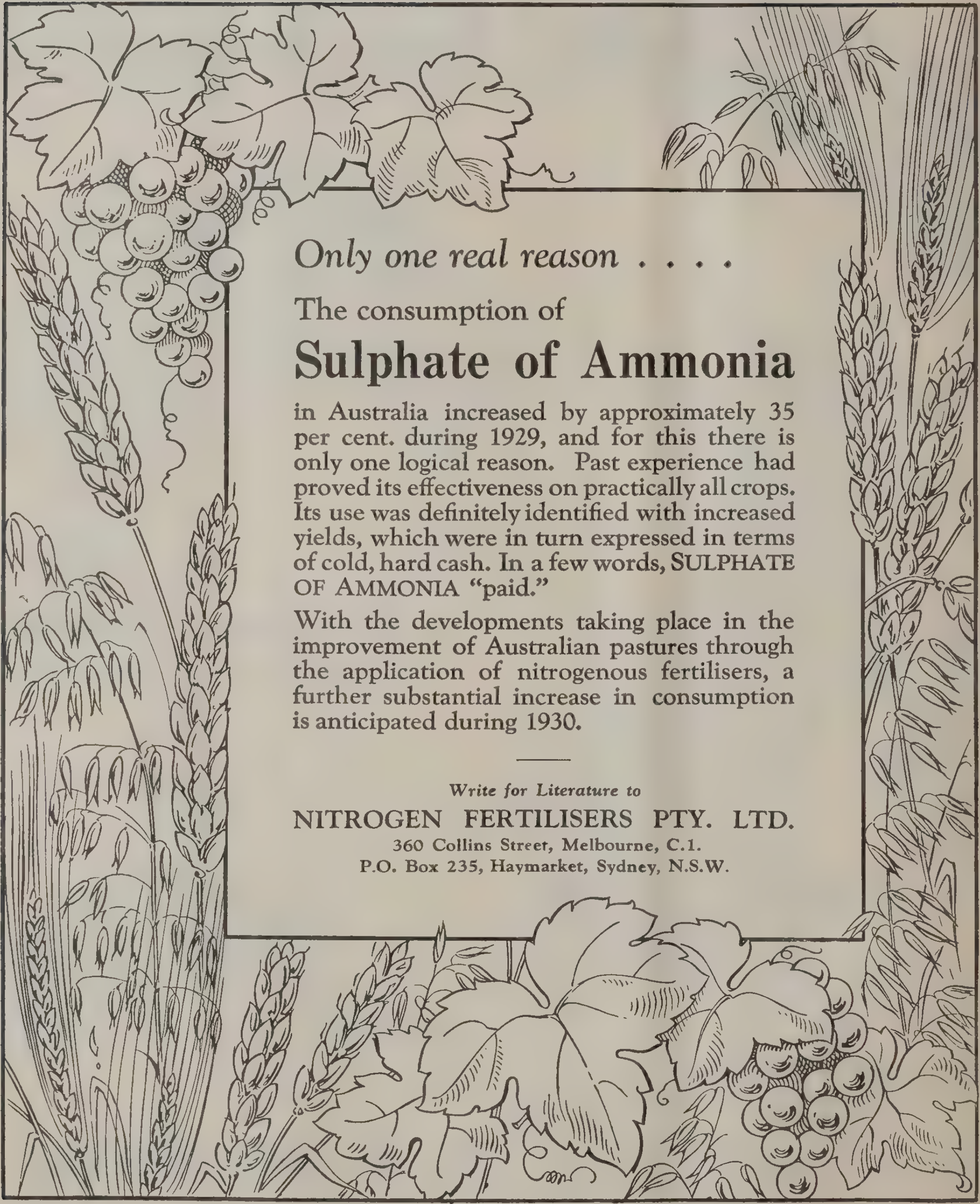

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in Australia increased by approximately 35 per cent. during 1929, and for this there is only one logical reason. Past experience had proved its effectiveness on practically all crops. Its use was definitely identified with increased yields, which were in turn expressed in terms of cold, hard cash. In a few words, SULPHATE OF AMMONIA "paid."

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Koondrook and Barham Tomatoes are not under control this year, as they have been sold at prices considerably under the Adelaide price, thus adversely affecting same.

The packing and grading of South Australian Association Tomatoes has shown marked improvement during the season, which has been appreciated by the agents and buyers. The Executive is still anxious to improve the "get-up," and strenuous efforts have been made throughout the season to ensure as near as possible the standard pack.

Buyers are usually prepared to pay more for South Australian products because they are beginning to realise that the packing and marking can be relied upon.

The officers of the Victorian Department of Agriculture have assisted the market representative in this work. Growers are continually advised of any faults in regard to packing, size and color grading.

Having regard to the price of fruit generally on the Melbourne market this year, prices have been reasonably good throughout the season.

Cucumbers.—A small consignment of Cucumbers have been received, and prices have ranged from 12/- to 18/- per bushel case. An appreciable improvement has also been made in grading and packing, and the quality has been good. It is expected that consignments will increase in size during December.

H. WILSON
Wholesale Fruit Merchant and Commission Agent,
No. 10. New Wholesale Fruit Market., Melbourne.
Accredited Agent for Victorian Central Citrus Ass'n.
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A Trial Consignment solicited from Growers in all States.
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26 New Wholesale Fruit Market, Melbourne

Cherries.—The prices for good quality South Australian Cherries have been in the vicinity of 11/- to 12/- per half-case, and buyers commented on the very excellent quality.

Gooseberries and Loquats.—Small consignments of Gooseberries and Loquats have also been marketed.

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

At the monthly meeting of the Executive Committee of the South Australian Fruit Marketing Association on December 19, the Chairman (Mr. H. J. Bishop) advised that space could be obtained for 4,000 half cases of Pears on the s.s. "Baradine," on January 19, 1931. While it was thought this was too early to obtain the necessary fruit, the matter was left to the shipper members to finalise.

Australian Export Council.—Mr. J. B. Randell gave an interesting report of the Melbourne Conference. He explained the constitution of the proposed Australian Council, the first annual meeting to be held next August.

WORLD SUGAR CROP.

The 1929-30 world sugar crop was recently estimated by the U.S.A. Department of Agriculture at 30,045,000 short tons, as compared with the record crop of 30,435,000 short tons produced during the 1928-29 sugar season.

The world's beet sugar crop estimated at 10,237,000 short tons is only .5 per cent. below the previous season, while the cane sugar crop shows a decrease of 1.7 per cent. from 1928-29.

AUSTRALIAN SUGAR YIELD.

Slightly Lower Than Last Year.

195,000 Tons for Export.

From returns received from the thirty-five sugar mills in Queensland, the Registrar-General estimates that this season there will be 512,675 tons of sugar made, at 94 net titre, compared with 518,516 tons last year, and 520,620 tons in 1928, which was a record for the State. It is estimated that there will be 195,000 tons for export this season.

London's Shipping Increasing.—A report to hand from the Port of London authority, states that London shipping, despite the general trade depression, has been greater than ever during 1930. During the nine months from January to September the tonnage of vessels that used the port was more by 834,296 nett registered tons than during the same period of 1929. The relative figures are: 43,738,889 nett registered tons for 1930, and 42,904,593 nett registered tons for 1929.

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New South Wales.

FRUIT CROPS IN NEW SOUTH WALES.

Apples Medium to Light: Pears Light.

A REVIEW of the coming crops of Apples and Pears to hand from Mr. A. A. Watson, Director of Marketing, State Marketing Bureau for New South Wales.

Apples.—The report, which is dated December 23, states that in coastal districts the dry weather unfavorably affected crops. Prospects are favorable in the Batlow district for good crops of Granny Smith, Jonathan, Gravenstein, Yates and Tasma. Through faulty pollination, Five Crowns are light. Other light varieties are Delicious, King David and Dunns.

In the Bathurst district there are medium crops of Granny Smith, Jon., Cleo., and MacIntosh. Other varieties light. Apples are light in the Orange and Goulburn districts. At Crookwell a good crop of Five Crowns is expected. At Young the varieties are from light to moderate.

In the Burradoo-Moss Vale district, reasonably good crops are expected with G.S., Jon., MacIntosh, Grav., Pomme de Neige, Mobb's Royal, King David, Cleo., and Carrington.

Light to medium crops are showing on the Northern tableland. Good yields of Jons., and most other varieties are expected around Albury, Rome Beauty light.

On the irrigation area Granny Smiths are very light. The total Apple crop is estimated at around 1,370,000 bushels, some of the principal varieties being estimated at:—G.S., 337,800; Jon., 352,160; Five Crown, 82,000; R.B., 71,000; Grav., 66,700; Carrington, 53,300; Tasma, 45,400; P. de N., 36,000; Del., 31,750; Cleo., 26,300.

Pears.—The Pear crop is generally light. At Young, both Packham and Williams set well, but shed heavily. Winter Cole and Jos. have fair crops in some orchards. At Batlow Winter Cole and Williams are fairly heavy. The early promise of good crops at Young vanished when the trees shed heavily.

In the northern tableland, fair crops are expected. At Albury there should be fair yields of Williams and Packham. On the Murrumbidgee Irrigation Area, also in the Camden-Moss Vale district, crops are light. Fair crops of Williams are showing in the Capertee-Bathurst district. The total estimate is around 400,500, the principal varieties being Williams, 176,800; Packham, 72,650; W. Cole, 64,550; B. Bosc, 22,800.

N.S.W. FRUITGROWERS' FEDERATION.

THE monthly meeting of the Board of the Fruitgrowers' Federation of N.S.W. was held in Sydney early in December.

The Secretary reported having appeared before the Sugar Committee.

Australian Conference.—Messrs. H. V. Smith and H. Broadfoot were appointed to attend and represent the Federation.

Importation of Apples.—In view of steps being taken by certain merchants to secure the right to import Apples from Canada, the Secretary reported having sent a cablegram to the Minister for Markets in London, asking him to make it clear, if approached in Canada, that the embargo could not be lifted.

Fruit Fly.—A report was received that the Government Entomologist had been conducting intensive experiments resulting in the recommendation of a very practicable and inexpensive method of control in Peach and Apple orchards. Parasites from Hawaii and India would shortly be imported. It was not deemed necessary to appoint an additional officer to the Departmental staff to deal with fruit fly matters.

Griffith.—Mr. Wilson Moses, Griffith Producers' Cooperative Co. Ltd., advises as follows under date November 24:—

The principal fruits grown in this district are wine Grapes, citrus, canning Peaches, in the order named.

In addition, there is a large acreage of other varieties, such as Prunes, Apricots, Apples, Sultanas, and table Grapes. Other lines are not of sufficient importance, but practically every variety of fruit, with the exception of tropical fruits, is grown here.

Crop Prospects.

Regarding the coming prospects, on appearances there will be a good Grape crop, although not as heavy as last year.

Navels have set well, but the Valencia crop is very poor.

Canning Peaches are good.

Prunes are fair. Apricots are very poor, and Sultanas light.

Apples are practically a failure.

The weather conditions are not favorable for the Grapes, such as Sultanas, Ohanez, etc.

Developments at the present are more in the direction of concentrating on existing varieties such as wine Grapes and citrus, and these are practically the only lines being planted. A number of Apricots are coming out, and there is a tendency for some growers to get rid of small patches of Sultanas. There is very little new development taking place in the district. Some growers are extending their plantings and concentrating on citrus and wine and table Grapes.

There are new buildings going up in Griffith in every direction, and houses are hard to get. The wheat crop in surrounding districts is much better than it has been for some years, although, of course, low prices are having their effect on the business in town.

Rice Production.

A large area is going under rice again this year, and there is ample water supply in sight for the crop. It was feared some time ago that the area would have to be greatly restricted on account of the low state of the Burrinjuck.

IMPORTED LEMONS.

Embargo Not to be Lifted.

ADVICE is to hand from Col. E. E. Herrod, Secretary, N.S.W. Fruitgrowers' Federation, expressing satisfaction in that the Minister for Trade and Customs has definitely announced in Parliament that the Government will not permit Lemons to be imported.

The Federation reports that the Wholesale Fruit Distributors' Association recently requested the Federal Government to partially lift the embargo, stating that suitable local Lemons were not available to fill all the requirements of the market. Representations had also been made to the Federation requesting the Federation to withdraw its opposition.

Apart from the possibilities of the introduction of further diseases, the Federation believes that the present position does not warrant even the partial lifting of the embargo.

Reports to hand indicate a record crop of Lemons in New South Wales, also a good crop in Victoria, and a surplus in the West.

The Wholesale Fruit Distributors' Association stated that the local Lemon was not suitable for filling long distance orders. In this connection the Fruitgrowers' Federation asserts that the ordinary local summer Lemon is eminently suited to most of the trade, and will be absorbed by the trade if the Italian Lemon is not available. The long distance orders referred to account for a very small quantity, and there should be ample supplies available to fulfil this requirement.

In reply to questions asked in the House by Mr. A. E. Rowe on behalf of the Fruitgrowers' Federation, the Minister for Trade and Customs, in reply, stated that "The citrus fruit producers claim that adequate supplies of Australian Lemons are available, and, as this appears to be the case, it has been decided not to issue permits for importation."

Mr. Rowe expressed the hope that growers will do their part towards ensuring a supply of suitable Lemons on the market, and the Fruitgrowers' Federation urges growers to improve the marketing of Lemons in order to secure the permanency of the embargo.

N.S.W. FRUIT TRADER RETURNS FROM TRIP ABROAD.

Mr. A. J. Cooper, who has been engaged in the N.S.W. fruit trade for over 38 years, returned on November 5 from a nine months' trip to Great Britain, the Continent and America.

Whilst in England he saw Australian Apples and Pears being sold, and was greatly disappointed to see the collapse of the market in July, due to the English and Continental soft fruit coming on the market: Apples from the last shipment of 95,000 cases of Tasmanian Apples sold at 2/6, 3/6 per case. He was greatly impressed with the long lines of New Zealand Apples under one brand, attractively packed and presented, also with the attractive appearance of the South African Navel Oranges

Through the courtesy of Mr. F. H. Millman, Superintendent of the Spitalfields Markets, Mr. Cooper inspected these markets and was struck with the commodious warehouses and sales rooms. In the auction room where fruit is offered every contrivance is installed for the quick handling of fruit and the convenience of buyers for inspection.

At the warehouses of Messrs. J. W. Cook & Co. Ltd., Millwall, England, Mr. Cooper saw 20,000 cases of Australian dried fruit stored under ideal conditions. The packages were carefully handled and every attention was given to provide complete ventilation throughout the stacks. Mr. E. G. Devitt, the managing director of the firm, who showed Mr. Cooper through the warehouses, and his co-directors seem to have thoroughly grasped the importance of the dried fruit industry to Australia, and the A.D.F.A. are fortunate in having a firm representing them who take such a keen interest in the industry.

Whilst in Norway in July, Mr. Cooper was much surprised to see Red and Black Currant bushes which grew to 12 feet high, and Biggareau Cherry trees up to 40 feet high. He also saw Cherries in Italy, France and England, but could find nothing to equal the N.S.W. Cherries in quality.

Early Strawberries were sent to London by aeroplane from Holland. The large imports of berry fruits into England this year have had a very detrimental effect on growers of small fruit in England. Large quantities of Black Currants and Raspberries were left unpicked owing to the poor prices ruling. He was greatly impressed with the intense cultivation being carried out, particularly in European countries. In France he was told there were only eight unemployed.

Sugar Question.—The price of sugar in New Zealand greatly surprised Mr. Cooper. Placards in grocers' shops indicated that 6 lb. of sugar could be bought for 9d., with 1 lb. of tea for 2/-; the retail price of sugar was 2d. per lb. It seemed strange that our surplus sugar could be exported and sold at these rates when the Australian consumer had to pay the present high price. Supplies of sugar at the world's parity to Australian fruit canners and jam-makers would go a long way to helping to solve the unemployment position, and considerably relieve some of the taxation burdens.

Speaking of the recent special shipment of N.S.W. Apples, Mr. Cooper said that the packing and condition in which the fruit arrived was a great credit to the shippers. He predicts a splendid future for the Granny Smith Apple in the overseas markets when better known.

Margetson & Co. Ltd.
Fruit Importers and Salesmen
30 James Street and James Street Warehouses,
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COVENT GARDEN, LONDON, W.C.,
and at Jamaica House,
9 and 10 Botolph Lane, London, E.C., and
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Sales by PRIVATE TREATY.
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London, W.C.

Shipping Nos.: 431 and 432.

The prices realised for this shipment were very satisfactory, being, approximately, Granny Smiths, 15/- to 17/3; Cleos., 11/9 to 13/6; Democrats, 11/- to 12/6; Jonathans, 11/6 to 12/9; Sturmers, 11/6 to 12/3; Rome Beauties, 11/- to 11/9; Dunn's, 11/6 to 12/6; London Pippins, 10/6 to 11/6; C.O.P., 20/- to 24/-; Tasmas, 11/- to 12/-; K.D., 10/- to 11/-. Pears, half-cases Winter Nelis 7/6 to 10/-, Glou Morceau 6/6 to 7/-, L'Innconnue 6/3 to 7/3, and W.B. 6/6 to 7/-. Too much credit cannot be given to Mr. Broadfoot, an officer of the Department of Agriculture, N.S.W., who accompanied this shipment and watched the cool chambers in the boat, the result being the excellent condition, although a fortnight late on arrival.

Mr. Cooper did not lose much time getting into harness again; a few days after his return he presided at the annual meeting and dinner of the Tasmanian Selected Agents; Mr. V. J. Skinner, representative of the Tasmanian State Fruit Advisory Board, being the guest of the evening.

Plum Export.

South Australian Experiences.

ADVICE is to hand from Mr. Geo. Quinn, Chief Horticultural Instructor, South Australian Department of Agriculture, re the export of Plums, three or four small shipments having been made at intervals over a period of years, the latest being on the R.M.S. "Orvieto" on February 21, 1929. The following is a summary of the information furnished by Mr. Quinn.

Quite a lot of varieties, including Japanese hybrids and European kinds, were tried. Of the former, the principal sorts were Wickson, Burbank, Climax, Kelsey, Shipper, October Purple, and Satsuma, and of the latter Golden Drop, Grand Duke, President, Fellemberg, Blue Diamond, Giant Prune, Green Gage and Damson, were also tested. The two latter kinds have to be sold as non-fancy fruit, and although there is a call for them, the prices are not very attractive for such a risky fruit.

October Purple, Shipper, Kelsy and Satsuma, have proved to be the best Japanese Plums, and Grand Duke, President, Golden Drop and Giant Prune, the best European sorts. The South African Plums sent to London at the same season are larger than South Australian average, and only the finest we can command should be shipped.

Packages.—From the experiments, the type of tray favored would be made up to the internal dimensions of the Canadian case, but 2¼ inches deep, to hold one layer of Plums only; the sides, tops and bottoms to be made of ¼ inch thick pine wood, and the ends of ¾ inch thickness; the fruits to be wrapped individually in white tissue and embedded in a neat nest of soft white wood wool. From two to four of these trays may be wired together, and a cross cleat nailed at each end of both top and bottom trays in the bundle. The trays would all be lidded so that they may be sold singly if desired. Made out of wood of the thickness given, four would make a parcel equivalent to the so-called "Canadian" standard case, which has lately come much into favor for shipping Apples.

A paper label about 2¼ inches wide, and of a length nearly equal to the width of the end of the tray is pasted on each end. Those used here had the name of the shipper or packing association printed on the lefthand third, the name and number of Plums in the centre, and the name of the State on the other end. The two end printings were in black lettering on a deep yellow background, leaving an oval shaped white space in the centre bearing the name and number referred to. Other colors could be adopted, but a design of this kind gives a neat attractive and legible label meeting the requirements of the Commerce Act.

The fruit should be marketably ripe, as immature and still acid Plums will shrivel around the stalk end and become wasty in appearance. The fruit does not develop skin color—black or red—in transit, so black or blue Plums must not be still half green, and the bloom should be as far as possible retained on the Plums as size and appearance appears to count for more than flavor with the purchasers of these fancy fruits.

SULPHURING CITRUS TREES.

Practice Not Recommended.

EXPERIMENTS in the sulphuring of citrus trees during the blossoming stage for the purposes of increasing the crop were carried out at Shepparton in 1929-30, by Mr. W. A. Rolfe, Citrus Supervisor, Shepparton, under instructions form the Government Citriculturist (Mr. S. A. Cock).

Twenty trees were sulphured on November 7, at the full bloom stage, on November 22, ten of the trees were re-sulphured when the petals were falling. The sulphur was applied with the sulphur bellows, and the application was proceeded with until the trees showed a deposit of sulphur everywhere on the foliage and bloom. The quantity of sulphur used was about 2 lbs. per tree. The fruit from the sulphured trees was counted. Only one tree of those given one sulphuring showed an increase over its check. Three of those given two sulphurings did not yield as many as their checks, though the total number of fruits from five trees given two sulphurings, was about 200 more than the total from the checks.

As a result of the experiment it is considered that the practice of sulphuring on a commercial scale would not be justified as the cost of the work and material is not compensated for by the increase in crop.—"Journal of Agriculture."

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"To Choose the Best is Wisdom"

ALL APPLE GROWERS

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The "Lightning" Model 18

In handling apples for both export and the local market, a lot of time and money can be wasted. Because there are so many individual apples to be sorted, sized, wrapped, packed and lidded in a short time, it is difficult to maintain a high standard of pack and returns suffer. The only way in which this can be avoided is by having a machine specially designed for the purpose.

THE "LIGHTNING" MODEL 18 REMOVES ALL THE DIFFICULTIES ASSOCIATED WITH PACKING LARGE QUANTITIES OF APPLES in one quality.

It can be inspected at our Showrooms, 517 Albion Street, West Brunswick, and we will be only too pleased to demonstrate its many advantages to you.

Our Catalogue, No. 7, is now to hand, and among many other Models the Model 18 is both illustrated and described.

The "Lightning" Fruit Grader Co.

517 Albion Street, West Brunswick, N. 12, Victoria.

INSECT PEST CONTROL.

Big strides have been made by the California Spray Chemical Co. since the inauguration of the company some 24 years ago by two young men. To-day, 15 professional entomologists are employed, and over 100 trained field men who study pest control problems in various parts of the world.

Their early success was with codlin moth control, it being found necessary, because of a wet ocean fog which daily wetted the leaves, to devise a neutral or basic form of arsenate of lead, and a new standard was thus set up. Since then the company has steadily pursued its policy of developing new insecticides and improving those already known.

Foremost among the many successes was the highly refined white oil emulsion known as "Volck"—named after one of the founders of the company. Crude oils had long been used as insecticides on dormant trees, but it remained for Mr. Volck to discover that the removal of certain elements by a special refining process left a product highly toxic to insect life, but which actually protected the vegetation and improved the color and quality of the fruit. Oil sprays such as Volck, and the new product "Orthol K." have been found particularly serviceable in controlling scale insects, red spider, mealy bug, white fly—and, when combined with other materials, codlin moth, aphids, thrips, and other pests.

Big acreages of Citrus in Australia, California, South Africa, Spain and elsewhere are now regularly sprayed with Volck to control scales and red spider. In Australian Apple and Pear producing districts—as also in U.S.A.—a combination of these materials with arsenate of lead, has been found very effective in controlling the codlin moth.

Other products manufactured by the California Spray Chemical Company, for whom Messrs. H. C. Pannifex & Co., of Melbourne, are the Victorian agents, are Ortho Kleenup—a winter oil spray; Ortho Dusting Sulphur for controlling mildew, rust, rot, etc. Ortho arsenate of lead (acid and basic) for codlin moth, caterpillars, beetles, cankerworms and other leaf and fruit eating insects; Ortho powdered Bordeaux a chemical mixture of lime and copper sulphate, for scab mildew, blight, and other fungus diseases. Del Monte Liquid Spreader, a new type of spreader used in combining dry sprays and oil sprays or with either type of spray alone. Ortho Whale Oil Soap, a liquid spray soap to control aphis, thrips, and other pests.

The California Spray-Chemical Company invites readers of this journal to write to their agents for illustrated material descriptive of their products; and, also concerning any problem that confronts them in the way of pest control. Advice and assistance will freely be provided.

Messrs. H. C. Pannifex & Company have been advised by the California Spray-Chemical Company, whom they represent in Victoria, that the well-known Volck white oil spray products will shortly be manufactured in Australia.

Australian Dried Fruits.—The sixth annual report of the Commonwealth Dried Fruits Control Board is to hand. A summary appears in the "Fruit World Annual" now in course of publication.

The "Harvey" Tunnel Dehydrator has been specially designed on up-to-date lines to meet the needs of fruit-growers and companies desiring to dry their crops of fruit. Full particulars will be gladly supplied by D. Harvey, Box Hill, Vic.

HARCOURT AND DISTRICT.

THE Harcourt (Vic.) district was recently visited by our travelling representative. Portion of the report on the district was published in our last issue.

We now continue the notes hereunder:—

Mr. J. H. Leversha has 25 acres, mostly Apples and Pears. Apples: Jonathan, Dunn's, Romes, Pomme de Niege, Cleo. Pears: Packhams, Josephines and Nelis. There are also several acres of Cherries, with such varieties as Eagle Seedling, Margarets, Werders and Guigne.

Prospects.—Apples light; Pears light to medium; Cherries medium.

Mr. T. G. Robbins has mostly Apples and Pears on his 27-acre orchard. The Apple crop is unfortunately light. The varieties include Dunn's (7 acres), Romes, Delicious, Rymer, Cleo., Jon., and Spitzenberg.

The Pear crop is good: the varieties are Williams, Josephine, Nelis, Glou Morceau, Winter Cole and Packhams.

On his well-kept orchard of 14 acres Mr. R. W. Eagle specialises in Apples and Pears. The Apple varieties are as follows:—Dunn's, Jon., Rome, Rymer, Delicious, Yapeen, Spitz., Pomme de Niege.

Pears.—Nelis, Josephine, Williams, B. Bosc, Anjou, Eyewood and W. Cole.

The prospects are:—Apples light; Pears good.

Some splendid Cherry trees were noted on Mr. W. H. Syme's orchard. Mr. Symes has about four acres under Cherries of such varieties as Florence, Eagle Seedling, and Werder's. The crop is medium. The heaviest plantings, however, are of Apples—10 acres—the varieties being Dunn's, Spitzenberg, Romes, etc.

A big crop of Plums is showing, the varieties being principally Grand Duke and Golden Drop—both export varieties. Mr. Symes has about 4 acres under Plums. There are about two acres under Pears, the Principal varieties of which are Nelis, Josephines, and Packhams. The crop is medium for the coming season.

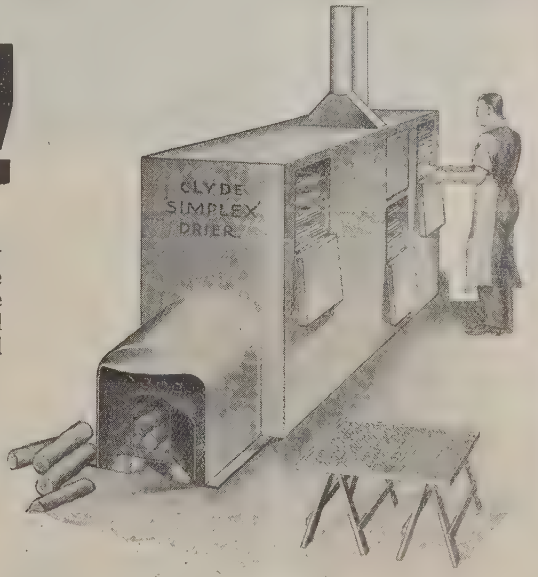
In Mr. W. E. James' 27-acre orchard the Apple crop is only light this season. The varieties are Dunn's, Jonathan, Delicious, Cleo., Schroeder; and the Pears, Josephine, Nelis, Packhams, Williams and Winter Cole. A few years ago Mr. James took a prominent part in the Victorian Fruitgrowers' Central Association, and capably filled the presidential chair.

A successful and much-esteemed fruitgrower is Mr. Eb. Eagle. On this orchard of 40 acres the principal varieties of Apples include Dunn's (5 acres), Romes (5 acres), Jonathans, Cleos., Rymer, Five Crowns. This season's crop is a light one. The Pear crop, however, is showing up satisfactorily: the varieties are Williams, Josephine, Capiaumont, Gansel's Bergamot and B. d'Anjou.

Mr. C. H. Seelenmeyer has 35 acres under fruit. The prospects this year are:—Apples, light; Pears, medium; and Plums good. The varieties are:—Apples: Dunn's, Jonathan, Romes, Schroeders, Cleos., Stewarts and Five Crown. Pears: Nelis, Jos., Packhams, Williams, Bosc and Bergamot. The Plum varieties are Grand Duke, Magnum Bonum, and Silver Prune.

On the 15-acre orchard of Mr. R. W. Bertuch the trees were noted to be in good condition, but unfortunately the Apple crop is light this season. The Apple varieties include Dunn's (3 acres), Romes (3 acres), also Jonathans, Spitz., Schroeders and Stone Pippins. The Pear crop, too, is light. With this class of fruit the varieties grown are Winter Nelis, Jos., B. Bosc, Williams. A fair crop of Plums, however, should be harvested. The varieties grown include Grand Duke, President, Orleans, Jefferson and Pond's Seedling.

To be Continued.



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With a CLYDE SIMPLEX DRIER you can dry any kind of fruit or vegetable. Many growers are turning waste into profit by installing one of these machines. Simple to install, easy and economical to run. Anything dried with a SIMPLEX will keep indefinitely.

A user writes: "I have successfully treated peaches, plums, apples, potatoes . . . finished articles equal, if not better, than anything I have seen."

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GRANVILLE, N.S.W.

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[Via the Manchester Ship Canal]

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Canal and Docks 28 feet uniform depth; modern equipment designed to expedite receipt and distribution of perishable produce; all berths connected with main line railway systems.

Imported Fruit Sale Room, Manchester.
A sale in progress attended by wholesale merchants from all the principal cities and towns in the North and Midlands; upwards of 100,000 packages have been sold by auction in these rooms in a day. The lifts in the left foreground convey samples for inspection from rooms below.

Ship Direct to Manchester

The Commercial Hub of the North and Midlands.

The port which has more consumers within 75 miles radius of its markets than there are in the corresponding radius around London.

This enormous population requires large quantities of imported fruit and other produce, and much of that which is landed in London and other ports is ultimately railed or transhipped by steamer to Manchester markets for distribution. The producer pays (directly or indirectly) the extra transport charges involved, plus the original importers' commissions and profits.

With few exceptions, the average prices realised at Manchester for Australian and Tasmanian Apples are higher than at any other British port; price records extracted from the Weekly Market Reports (issued by British Ministry of Agriculture), as also addresses of Manchester fruit brokers and merchants, and all other information re port and selling charges, etc., will be supplied on application to:—

CAPT. W. J. WADE
8 BRIDGE STREET - - - SYDNEY, N.S.W.

Cables & Telegrams: Portoman," Sydney.

SHIPMENT TO ROTTERDAM.

(The Editor, "The Fruit World.")

Sir,—In your issue of November last, you very kindly reported a brief outline of my recent visit to the United Kingdom and Continent of Europe. Certain observations of that report, which were given for the benefit of exporting growers, have been taken exception to by Mr. Colombie, as published in your issue of December. It is not my desire to enter into a paper controversy; in this instance, however, I would be glad if you would publish the following in reply to Mr. Colombie:—

Mr. Colombie summarises and enumerates five main points of my report; replying to these in that order.

In stating that the "Port Hunter" carried 40,000 cases of Apples, I was in error (the quantity was 30,000), this fact, however, further aggravates the position because it admittedly took nearly seven weeks to clear this shipment, at about an average of 4,200 cases per week, that is if the shipment was cleared on August 5. I know that some were offered for sale on that date.

The above proves beyond doubt that the shipment was many thousand cases in excess of what the Rotterdam market could absorb satisfactorily. The fact that, from Rotterdam, practically the whole trade (including buyers who regularly operate on the Hamburg market) was circularised offering these Apples ex the "Port Hunter" must have had a depressing effect on the Hamburg market.

Mr. Colombie says that Hamburg split the sale of "Port Hunter" shipment by offering 22,000 Victorians on June 19, and 15,000 South Australians on June 26, and that to have added another 30,000 cases would have had a worse result for everybody concerned. The facts are as follows:—The Hamburg brokers advertised and offered for sale on June 19, 61,300 cases, comprising 49,300 Victoria and South Australia ex s.s. "Port Hunter" and "Leuna," and 12,000 cases of Chilean Apples ex s.s. "Justin." Those catalogues advised the trade that a further 69,000 cases of South Australian and Victorian ex s.s. "Port Hunter" and Tasmanian ex the s.s. "Canonesa" were to be offered at the sales operating on June 26. Mr. Editor, I am prepared to show you proof that these figures are correct. Further, the brokers advertised large shipment of New Zealand Apples, due the following week. It was also known that still other large cargoes were to arrive.

Mr. Colombie admits that he arranged the shipment to Rotterdam and was there on arrival of the s.s. "Port Hunter." Probably he was not aware of the facts outlined by me above, when he advised, and from his own statement, fought so hard, to have this shipment cold stored, or, was it an error of judgment on his part in not having cargo intercepted and sold at another port, or was it that his Rotterdam principals would not release this cargo.

It is well known to shippers and an established custom among brokers to split shipments into two and sometimes three days' sales, with good results to all interested. I would just like to say here that I am very much surprised that Mr. Colombie, with his knowledge of markets, saw fit to enlarge on this point, as it may lead shippers and growers to think that his knowledge of overseas markets is still somewhat elementary.

Without diverting from the issue involved, by bringing in matters outside of those of actual interest to the growers of Australia, I will conclude by again emphasising that we should open up new markets for our fruit, but not at the expense of existing well-known and profitable markets.

Wishing you and your readers the compliments of the season,—I remain,

Yours faithfully,

J. W. BARKER,

533 Collins-street, Melbourne.

Narre Warren, V., 27/11/30.—The principal fruits grown here are Apples and Pears.

Apples.—Jonathan, Rome, Yates.

The Jonathans are patchy; Romes very light; Yates light to medium.

Pears.—B. Bosc is the principal Pear with small quantities of Williams (being gradually reworked); Packham, Winter Nelis and Josephine; a few Kieffer and W. Cole.

Crop Prospects.—Bosc, light, others, excepting Kieffer, light to medium. Kieffer, heavy in patches.

On an average I should say crop is about 40 per cent. of 1929.—R. E. Haysey.

"Don't waste your fruit" is the advice tendered by the Clyde Engineering Co., of Granville, N.S.W., manufacturers of the Clyde Simplex Drier. The equipment is made in large or small sizes, and dehydrates all fruits and vegetables, and all details are available on application.

TREES
RESOLVE NOW
to plant Goodman's Reliable Trees only this year—Cleanest, Healthiest and most prolific bearers of finest fruit in all parts of Australia.
Write for Catalogue.
GOODMAN'S NURSERIES
P.O. Box 47.
BAIRNSDALE — VICTORIA.
(W-McF.)

COMMERCIAL ITEMS.

Camm (D.) & Sons Pty. Ltd. Regd. office: Camm's-road, Monbulk. Regd. December 1. Objects: To acquire the business of fruit growers and jam manufacturers carried on by D. T. Camm, P. J. Camm and N. H. Camm. Capital: £5,000 in £1 shares. Names subscribed to memorandum: Daniel Thomas Camm, 1 share; Philip John Camm, 1 share; Norman Harold Camm, 1 share.

* * * * *

Garford Moore Pty. Ltd., orchardists, etc. Regd. office: Bakers-road, Blackburn. Capital: £5,000 in £1 shares. Directors: Francis Joseph Garford, one share; Jessie Mildred Garford, one share; Frank Moore, one share; and Henry Edmund Paley Moore, one share.

* * * * *

Southern Victoria Pear Packing Co. Ltd. Regd. office: 15 Blackburn-road, Blackburn. Regd. November 27. Capital: £5,000 in £1 shares. Names subscribed to memorandum: Thomas Henry Petty, 10 shares; Frank Moore, 10 shares; Arthur Ernest Ireland, 10 shares; John James Tully, 10 shares; Victor Lawford, 10 shares.

* * * * *

Henry Jones' Co-operative Ltd.

The nett earnings for five years have been as follow:—

	Australian Income.	Receipts from Overseas.
1926	£118,746	£23,548
1927	125,497	35,205
1928	111,997	43,879
1929	118,372	44,819
1930	73,807	46,866

During the present transition period, Australian earnings were lessened while more revenue is received from overseas investments. The attitude of Governments in creating over-production is strongly criticised.

* * * * *

Kyabram Company Loses £16,000.

Addressing shareholders at the annual meeting of the Kyabram Co-operative Fruit Preserving Co., Mr. R. H. Gent, managing-director, said that the actual loss on the season amounted to £16,756. It would be exceedingly difficult to clear stocks during the coming year. It was estimated that English trade had declined about 50 per cent.

Strong representations had been made before the Sugar Enquiry Committee for relief, and the company was hopeful that the committee would appreciate the justice of the claim, which, if granted, would place fruit-growers' industry on a sound basis.

At the instance of Mr. F. J. Churches, it was agreed that the directors be asked to consider a proposition to process one-quarter of the fruit crop at £10 a ton, instead of half at £5 a ton.

* * * * *

Rosella Preserving Co.

At the annual meeting in December, the Chairman, Mr. F. J. Cato, said that, in common with all other industries, the company had felt the effects of the general depression throughout the year. Sales had been well maintained, and competition was keener. Profit was recognised as a secondary matter by some manufacturers, who were forcing sales at any price, and, in order to compete with such methods, the company had manufactured other classes of goods rather than reduce the price of their Rosella commodities.

Since the closing of the accounts, the company had acquired a controlling interest in Jonathan Reeve Pty. Ltd., and the stocks and bank overdraft of the Rosella company had been considerably reduced. The manufacture of several new lines had proved a success, and it was contemplated that further extensions in this direction would be made during the coming year.

The report and balance-sheet were adopted, and the retiring directors were re-elected.

* * * * *

Shepparton Fruit Preserving Co.

The annual general meeting of shareholders of the Shepparton Fruit Preserving Co. Ltd., was held on December 22. The annual report signed by the chairman, Mr. A. W. Fairley, stated that the nett profit was £9,502/6/7, which, added to the balance brought forward, £5,962/10/2, made a total of £15,464/16/9; the allocation to be as follows: £8,000 to a special reserve fund, and a 5 per cent. dividend absorbing £3,268/7/3, leaving £4,196/9/6 to be carried forward. The special reserve fund would be used if necessary to stabilise the price of fruit purchased from growers. During the year 29,284 bonus shares had been distributed from the reserve fund, making the paid-up capital £65,359/5/6. The quantity of fruit handled was a record, and the production of canned fruit amounted to 10,692,549 cans.

The assets include freehold property, buildings, plant, machinery, etc. (cost price, less depreciation), £133,066; stocks at valuation less advances by London agents, £106,948, and sundry debtors, £71,335.

* * * * *

Liquidation.

Geelong & Western District Preserving Co. Ltd. (in liq.), meeting of creditors at Regd. office: Yarra-street, Geelong, on December 16, at 12 noon, pursuant to section 189 of the Companies Act. T. A. Kelly, liquidator.

FRUIT TREES

ONE GROWER SAYS—
"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

PEAR EXPORT.

Southern Victorian Company Will Ship 40,000 Cases.

THE Southern Victoria Pear Packing Co. Ltd., has been registered with the nominal share capital of 5,000 £1 shares.

Mr. G. C. Karnaghan, Blackburn, was appointed Secretary, and Mr. F. J. Garford, has been selected as the company's representative to visit the United Kingdom in the coming season at a salary of £1,000 per annum.

40,000 cases have been booked for export through the company during the coming season, and the "Blue Moon" brand has been registered. Under the "standard" grade, fruit down to 2⅜ will be packed. As regards "plain" grade the directors decided that the company would export (for this season only), a "plain" grade of Pears, but not under the company's label.

Growers are entitled to ship 100 cases for every share taken up. The fruit is being delivered to cool stores and packed under expert supervision.

A levy of 9d. per case has been decided on to meet the expenses of the overseas representation.

(The Editor, "Fruit World of Australasia.")

Sir,—I have read your report of Mr. Garford's address to the fruitgrowers at Doncaster on the export of Pears from Australia, and as the Victorian representative of "The White Service," and on their behalf, I desire to take the strongest exception to his remarks under the heading of "Wasty and Wet Fruit." He states:—

> "Growers frequently received account sales which showed several cases 'wet or wasty.' This was sometimes genuine. . . . . . This item, however, was very much abused in some cases."

If Mr. Garford does not already know, I would take this opportunity to inform him that the organisation known the world over as "The White Service," is comprised of English gentlemen of the highest standing, whose business integrity is undoubted, and growers consigning to "The White Service" can rest assured that any comment appearing on their account sales, whatever it may be, is a true, faithful, and "genuine" statement on the condition of the fruit as received by them.

On behalf of White & Son Ltd. (The White Service) (Hull, London, Liverpool, Manchester, Cardiff, Newcastle, Antwerp).

CHAS. J. PARNHAM, Victorian Representative.
Melbourne, 23/12/30.

MELBOURNE AND METROPOLITAN RETAIL FRUITERERS' ASSOCIATION.

The monthly meeting of the Executive of the Melbourne and Metropolitan Retail Fruiterers' Association was held on December 4, and there was a good attendance of delegates present.

A discussion took place in reference to the conditions under which most of the Peas and Beans are being sold at the Victoria Market. Various speakers emphasised the fact that in justice to the growers, these goods should be sold in the stores or sheds under cover, and not exposed in the open sometimes for hours before being disposed of.

It was also contended that the present conditions had a most deteriorating effect on the value of same, as was amply proven on a recent wet morning when many buyers refused to purchase these saturated goods.

The expected approach of sunny mornings in the near future will also have a serious effect on this produce, and the Executive decided to endeavour to induce the market authorities to remove the vendors of the Peas and Beans to a position in the lower market, where there appears to be ample shed accommodation at present. Appreciation was also expressed at the efforts of the "Fruit World" to assist all branches of the fruit trade, and our members trust the result will be a mutual federation and benefit to all.

Retail Trade Comments.

During the month there has been no improvement in the retail trade, notwithstanding the arrival of the new season fruit, which up to the present has been very inferior to past years.

No doubt the continuous rainy weather has had an effect on the keeping qualities of both Cherries and Strawberries, and retailers complain that a big percentage of both have become unsaleable after a few hours.

Weather conditions with the variable changes have not been too conducive to business also, and unless a dry spell comes along in the near future there promises to be a great amount of "brown rot" in Peaches also, both country and local.

The high price of sugar is also having an influence against the making of jam.

EDWARD W. THOMPSON,
Secretary Melbourne and Metropolitan Retail Fruiterers' Association.

WHY NOT DRY BERRY FRUITS?

To the Editor of "The Fruit World."

Sir,—In connection with the present serious condition of the fruit industry, I have been somewhat surprised to note that practically no reference has been made to the possibility of mending the situation by drying the surplus fruit instead of allowing it to rot on the ground. I am informed that practically all fruits can be dehydrated, and that in this condition they will keep for a considerable time until a market can be secured. Surely, with all kinds of berry fruit, such as Raspberries, Loganberries, Strawberries, Black Currants, etc., it would be better to sell these in dried form than to allow them to go to waste altogether?

I understand that dried berry fruits when cooked retain their original flavor and are very suitable for consumption in puddings and pies, as well as in the form of stewed fruit. There is also the possibility that dried Raspberries or Strawberries might be sold in small packages as a sweetmeat, thus opening up an absolutely new source of demand.

I shall be glad if any of your readers can say if anything has yet been done in the direction of drying soft, perishable fruits other than Raisins and Currants. Besides the vine fruits we appear to export practically no dried fruits with the exception of Apricots. It is astonishing that our exports of Prunes are so infinitesimal in view of the excellent quality turned out by local firms.

Yours, etc., W. MITCHELL.
Warrandyte, 19/12/1930.

Classified Advertisements.

Fruit Trees.—Trevatt Apricot, budded from specially selected fruiting trees, guaranteed absolutely true, and the best-rooted trees obtainable, current prices. **Weare's Nurseries, Griffith, N.S.W.**

EDGELL SPRAY PISTOL.—Does quicker work, saves pounds' worth of spray every week. **KEMICO ODORLESS CLOSETS, MAXIM LANTERNS, 300 C.P. KEROSENE, DEMON COOKING STOVES, AIR GAS MANTLES.** Catalogues free.—T. W. SANDS, 372 Lonsdale-street, Melbourne.

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

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Sydney:
Chilton, F., City Fruit Markets.

VICTORIA.

Melbourne:
Andrew, Fred. J., 416 Lit. Collins St.
Cave, F., & Co., Melbourne.
Colombie, H. G., Temple Court.
Davis, J., Pty. Ltd., Western Market.
Mellor, F. R., 440 Elizabeth Street.
Millis, A., & Sons, Western Market.
Lister, G., Western Market.
McLean, N. N., Pty. Ltd.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Western Market.
Renouf, R., Western Market.
Ross, J. W., Western Market.
Scott & Edwards, King Street.
Silbert, Sharp & Davies, Western Market.
Stott & Son, T., Western Market.
Tim Young & Co. Pty. Ltd., Western Market.
Vear, F. W., 49 William Street.
Wilson, H., Western Market.
Woolf, G., Western Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Western Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., 88 Collins Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

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London:
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M. Isaacs & Sons Ltd.
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Garden.
Dan Wuille & Co. Ltd.
The White Service,
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
Connelly, Shaw Ltd.
White & Son Ltd.
W. G. Gosling.
The Port of Hull, London and N.E. Railway. Rep., Major H. S. Cole, c/o Burns, Philip & Co. Ltd., 7 Bridge Street. Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
MacGeorge & Jardine.
Woodall & Co.
Liverpool Fruit Brokers.
Johnson, T. S., & Co.

Bristol and Southampton:
Bristol Fruit Brokers Ltd.

Cardiff, Belfast and Dublin:
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Glasgow:
Russell, Turnbull & Co.

FRANCE.

Scheiber, E., Paris.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Algemeene Vruchten. Import Maatschappy (also Cologne).
Astheimer, P. H., & Son, Fruchthof.
Heinz-Tiencken.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof. Reps., J. B. Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

HOLLAND.

Amsterdam and Rotterdam:
Algemeene Vruchten Import, Maatschappy.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.
Kobenhaons Fugtauktioner.

Market Reports.

New South Wales.

N.S.W. Wholesale Fruit Distributors' Association.

This organisation, which has its head office in Sydney, is doing splendid work in connection with the development of new markets overseas for Australian fruits. During 1930, 25,000 double cases (40,000 bushels) of Navel and Valencia Oranges were exported to Canada, and met with a good demand. All fruit is well packed and graded and sold under an attractively-colored label on which the words "Gems O' Gold" stand out prominently. The company has its own representative in Canada, who is actively exploring all possible avenues for Australian fruits.

In addition, continuous efforts are being made to extend the markets they have already established in Singapore and Sourabaya for Australian Grapes and Oranges. It is hoped also to work up a trade with China and Japan, but much difficulty is experienced in regard to refrigerated space.

The Secretary of the company is Mr. J. B. Ferguson, who considers that an extensive trade could be developed with Canada if the Government could arrange a form of Empire preference, whereby Canada would raise a seasonal tariff against the United States Oranges. Mr. A. Weymark is chairman of directors of the company, and Mr. F. Chilton, Vice-Chairman.

Sydney (30/12/30).—Unfavorable weather conditions affected business since the Christmas holidays (states the State Marketing Bureau, Dept. of Agriculture).

Apples.—A small consignment of Apples, principally Democrats, arrived from Tasmania. Much of the Coastal Carrington crop is small, and only suitable for jam. Prices:—G.S. 10/- to 18/-, Democrats 6/- to 12/-, Carringtons 2/- to 10/-, Mobbs Royal, Grav., Lord Nelson and Allsops 5/- to 12/- per case.

Pears.—Very small quantities being marketed. Clapp's Favorite 4/- to 9/- per case.

Citrus Fruits.—A steady demand continues, and prices are unchanged except for extra large Lemons, which are difficult to sell. Oranges:—Val. 5/- to 10/-. Lemons:—Local 3/- to 10/-, Irrigation Area 5/- to 10/- per case.

Stone Fruits.—The supplies coming forward, though not heavy, are sufficient to meet the demand. Prices:—Peaches 2/- to 8/-, Apricots 3/- to 6/-, and Plums 3/- to 8/- per half-case. **Cherries.**—Demand limited, market showed a tendency to ease. Prices:—6/- to 11/- per quarter-case for dark.

Bananas.—The recent good demand has not been maintained and prices were easier at "Nines" 18/- to 20/-, "Eights" 16/- to 18/-, "Sevens" 10/- to 14/-, "Sixes" 8/- to 10/- per tropical case. Strawberries.—Supplies of local berries are plentiful, and prices closed at 6/- to 12/- per dozen punnets. Pineapples.—A steady demand prevails. Ruling prices are: Rough 8/- to 12/-, and Smooth-leaf 12/- to 17/- per tropical case. Watermelons.—Recent weather has adversely affected the demand, and prices are lower at from 5/- to 15/- per dozen.

Vegetables.—Peas: Supplies were heavy, with closing rates at from 3/- to 6/- per bushel. Beans: Limited quantities available, demand steady. Choice realised up to 11/- per bushel. Cabbages: Heavy supplies, prices 2/- to 7/-. Marrows: Selling freely at from 1/- to 4/- per doz. Lettuce: Sales slow and prices eased to 1/- to 1/6 per doz. Tomatoes: Demand quiet with rates lower at—Local 3/- to 7/-; repacked 4/- to 6/- per half-case.

Victoria.

"The worst December for business in 30 years," was the statement of one of the merchants at the Wholesale Fruit Market. There was some foundation for this doleful summing-up of the last month of 1930. The continuous rain that fell during the month was one of the primary factors. Thousands of cases of fruit arrived in bad condition through being packed while wet. Brown rot, caused by the humid weather, was prevalent, and thousands of cases of Peaches and Apricots had to be picked over and re-packed before any sale could be effected. Prices were ridiculously low, and fruit was practically given away.

Tomatoes arrived at the market in pulp form, and were immediately consigned to the tip at the market. Owing to the big carry-over, the factories were not buying largely, and this had a depressing effect on prices. One firm of sauce manufacturers secured all the Tomatoes they required at ninepence per case on December 16. The largest losses were incurred by merchants who placed fruit in their stores on arrival, and left it there overnight. When opened up next day, the fruit was worthless.

Melbourne (30/12/30).—The following prices, supplied by the Wholesale Fruit Merchants' Association of Victoria, ruled on Monday:—Bananas—Queensland: Green, double cases, (9) and (8) 15/- to 17/-, (7) 12/- to 15/-, (6) 9/- to 12/-; selected lines for country trade higher. Valencia Oranges, 5/- to 9/- a case, few specials higher; Lemons, to 10/- a case, few specials higher; Apricots, 2/- to 4/- a case, few specials higher; Peaches, 2/- to 5/- a case; Tomatoes, 2/- to 5/- a case, few specials higher; Plums, 2/- to 4/6 a case.

The Melbourne market manager of the Federal Citrus Council of Australia reports:—"There were comparatively few sales of Oranges and Lemons during Christmas week owing to the dull weather. There was a limited demand for a few special packs of Valencias. Large-sized Lemons were practically unsaleable. There is not likely to be any improvement in the demand for citrus until after the New Year holidays. Sales were as follow:—Lemons—Standard medium sizes, 180-248, sound lines, 10/- and 11/-; a few specials higher; small, marked, or large, 6/- to 8/-; faulty and wasty lines lower. Valencias—Average standard grade, 96-112, 154-182, 7/-; 126-140, 8/-, with odd sales to 9/-; small, 6/-; few selected lines higher. Grade Fruit—Plains, to 10/-; standard, to 16/-; best counts; few selected lines, 17/- to 24/-, according to count; faulty lines lower."

West Australia.

Perth (29/12/30).—Apples: New season in flats sold at from 10/- to 16/-, others ranging to 18/-. Citrus: Oranges, plain, flats 3/- to 8/-; dumps, 6/- to 12/- (inferior from 3/-); Lemons 3/- to 7/-. Plums: Shiro, flats 3/- to 11/-, Santa Rosa 9/- to 17/-, Cherry 2/- to 6/-, Burbank 5/- to 8/6; Peaches 8/6 to 17/- (others from 6/-); Apricots, 8/- to 17/-; Grapes, open, white 8/- to 12/- (special to 15/-); Strawberries 6/- to 15/- a doz. punnets.

South Australia.

Adelaide (31/12/30).—Apples: (eating) 6/- to 8/- case; do. (cooking) 5/- to 8/- case; Apricots 5/- to 6/-; Bananas (Queensland) 26/- to 28/-; Cherries (dark) 20/-, do. (light) 20/-; Lemons 18/- to 20/-; Nectarines 14/- to 16/-; Oranges (Common) 7/- to 10/-, do. (Navel) 10/- to 12/-; Peaches 12/- to 16/-; Pineapples 24/-; Plums (light) 5/- to 6/-, do. (dark) 4/- to 6/-, do., Jap. 6/- to 8/-.

Queensland.

Brisbane (30/12/30).—Bananas, Cavendish ¾d. to 8d. doz., Lady Fingers 1d. to 11⅛d., Sugars 1d. to 6d.; Apples, Stanthorpe, eating, Williams Favorite, 8/- to 12/- case, cookers 9/- to 12/-; Cherries 10/- to 12/-; local Papaws 1/- to 4/-; Passionfruit, best quality 8/- to 10/-, second grade 2/- to 5/-; local Lemons 4/- to 8/-; Mangoes, Northern, 4/- to 7/-; Peaches, Stanthorpe 3/- to 6/-; Apricots, Stanthorpe 4/- to 8/-; Pineapples, smooth leaf, best 7/- to 10/-, inferior 4/- to 5/-; Ripleys 5/- to 8/-; Northern Pines (rough) 6/- to 8/-; Nectarines 3/- to 8/-; Papaws, Yarwon 6/- to 8/-; Victorian Pears, ex Kyogle line: Jos. 2¼ inch. 16/- to 18/-, 2⅛ inch. 14/- to 16/-.

New Zealand.

Dunedin (24/12/30).—Reilly's Central Produce Mart Ltd., report as follows:—Full supplies of fruit of all descriptions. Considering the financial depression and low export prices, the spending power of the public is truly amazing. In our opinion we have really touched rock-bottom, the tendency is upward, and we feel that there are brighter times ahead for our consignors and customers. Prices:—Grapes, 3/1, 3/3 lb.; Tomatoes, local 1/-, 1/6, Christchurch 10d., 1/5; Strawberries, 10d., 1/6; Apples, Delicious 10/-, 15/-, Sturmers, 8/-, 10/-, Canadian Delicious 22/6; Oranges, Valencias 10/-, 13/-, Californian Navels 45/-; American Grapes, Red Emperors 32/6; Mission Lemons 45/-, Australian 28/-; Grapefruit, 45/-; Passions, Australians 25/-, N.Z. "Socro" large 32/6, quarters 15/6; Pineapples, Island Pines 20/-; Bananas, choice ripe 27/6, green 22/-.

Pumping Plants, Engines, etc.——

We are recognised as Specialists in
engineering jobs for orchard and farm
Consult us for your requirements

RUSSELL & CO. - - Engineers
BOX HILL

Karswood
Poultry Spice
1/-

What do your
EGGS
cost to produce?

No matter whether you are dependent on your poultry for a living, or whether you are a backyarder with an interesting and useful hobby—you should know exactly what your cost of production is. Have you ever thought to investigate what that cost is? You might find if you did that it was out of all proportion to the return you are getting.

The acid test for any egg-producing system is to divide the number of eggs obtained in any given period into the cost of the food used. If you are one of the happy band of users of Karswood Poultry Spice (containing dried and ground insects) you will find that the cost of producing each egg is very little. The cost of production would be low, because for the very small expenditure—very small actually and relatively—necessary to keep your fowls supplied with Karswood, you will get a very large increase in the number of eggs produced. Not only will you get more eggs, but they will be larger and better eggs.

A 1/- packet will supply 20 hens for 16 days. Buy a packet to-day and test it for yourself.

"Wonderful Increase in Egg Output"

I have used Karswood in England when I was only a "Backyarder." I came out here some 8 years ago to take up Poultry and Pigkeeping. I now have a small flock of 70 hens—about 65 White Leghorns and 5 Black Orpingtons, in their 2nd and 3rd seasons. I keep them in a large run—about ¼ of an acre, and let them out for a run every day for two hours or so. I took up Karswood again on the 26th June of this year. I feed 8lbs. of pollard wet in the morning with your allowance of spice, and 8 lbs. of wheat at night. After some 8 weeks of this I have had to reduce these quantities to 6 lbs. each. In addition they get a good picking of grass etc. when they are let out, and twice a week they get all the vegetable trimmings from my small stock. Up to the present I have noted the egg yield as follows:

	Last Year	*This Year*
June	253	92
July	242	427
August	679	1166

(The number of hens was the same both years—in fact they are the same birds.) To date the yield for September is in excess of last September; but will write later.

(Sgd.) G. GUMPRICH, *Pinjarra,*
17/10/29 *Western Australia.*

"Much Larger Eggs and Many More"

"I may say I have had much larger eggs and many more since using "Karswood" and my few fowls I keep in the garden are far better and brighter looking birds since using it. I have repeatedly passed on the good word to many people in a small way like myself. Wishing Karswood every success."

(Sgd.) Mrs. L. HUCKLE, *Kew,*
2/6/29. *Melbourne, Victoria.*

"Regular Supply of Eggs in Winter"

I have been using "Karswood" Spice for two years now and in that time I have never been without eggs, and the birds that I have killed for the table have been enough for three persons for two meals. I have a pen of five pullets and a rooster, who have been separated from the flock since May last and have laid on an average of two eggs per day. I have had in those months 460 eggs from those pullets, and May, June, July and August are the coldest months for this part. I can recommend "Karswood" Spice to anyone who keeps fowls in the backyard.

(Sgd.) W. L. N.
Original letter on file for inspection

"Increased Egg Supply and Improved Condition of Birds"

Sir,
"For five years up to 1929 I have kept on an average 50 head of poultry—two breeds only—White Leghorns for eggs and Black Orpingtons for the table. I have used your spices which greatly increased my egg supply and also wonderfully improved the condition of my birds. Wishing you every success with your wonderful spice."

(Sgd.) J.E. FILDAY, *Warrnambool P.O.*
15/5/29. *Warrnambool, Victoria.*

Make this Test

Go to your local grocer, storekeeper, or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half a dozen of your birds, in accordance with the directions on the packet. Do not expect immediate results—Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

Note the Economy

1/- packet supplies 20 hens for 16 days;
2/- packet supplies 20 hens for 32 days;
13/- (7lb. tin) supplies 140 hens for 32 days.

Supplies

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½ lb. packet, 1/-; 1 lb. packet, 2/-; 7 lb. tin, 13/-; 14 lb. tin, 25/-; 28 lb. tin, 48/-.

3.M.'0

KARSWOOD POULTRY SPICE

Increases egg-production without forcing, because it contains ground insects but no cayenne pepper, etc.

The Equipment of the Poultry Farm

MAXIMUM efficiency, within reasonable limits of expenditure, should be the key to the design of any well laidout and equipped poultry farm. It is of considerable importance for the poultry farmer to decide at the start the extent to which he hopes or intends to develop ultimately, in order that a sketch may be made of the plant at its full capacity and designs made of the shedding immediately required.

Letters are continually being received inquiring for plans of buildings for poultry, but no standard design has been adopted by the Department of Agriculture, for the reason that the materials available in Victoria are so varying that no standard could be followed with any faithfulness.

In the planning out the accommodation, certain general principles must be observed. Due regard for the ulitimate extension must not be overlooked, and labor-saving methods and appliances should be adopted wherever practicable. For the poultry farmer on a big scale the laying down of a small trolley line of hardwood rails will mean a saving of labor, and where there is an ample water supply it is an economy to adopt the ball-cock system connected with each pen. With guttering at normal prices, a tap may be used just dripping into the guttering which is carried past each pen, but provision should be made for cutting out any pen where sickness may arise, so as to prevent the water supply becoming a source of infection for the rest of the flock. Plans should be made for the following sheds:—Feed store and mixing, egg room, incubator shed, brooder shed, movable chicken colony houses, breeding pens, single test and laying sheds.

The feed store should be made rat and mouse proof, and rather on the large side, so that when opportunities occur stocks may be purchased on a bigger scale than just "hand-to-mouth."

The egg room should be as airy and cool as possible and well protected from the north. Plenty of shelving should be provided.

The Incubator Shed.—The small style of incubator has now virtually had its day, and the mammoth type of machine is becoming more and more popular; in fact, a big incubator represents a very sound investment for those in a position to purchase one.

The brooder shed should face north, whilst the other sheds for the birds face east. Chickens occupy the brooder shed only at such times of year as all available sunlight is required. The heating of the brooder shed may be supplied by hot-water pipes, gas, electricity, or kerosene lamps.

Portable colony houses for the growing chicks are really a necessity, as it is a terrible mistake to imagine that fowls can be reared year after year in small back yards, as is at present, unfortunately, an all too prevalent belief. Sooner or later this practice will result in a marked depreciation in the constitutional vigor of the birds.

The breeding pens should allow 4½ to 5 square feet of floor space per layer, and should be fitted with outside runs.

Single test pens may be built 5 feet deep by 3 feet frontage, the door forming the entire front. These sheds are useful for more reasons than merely determining the exact number of eggs a bird lays in a given period. The shape and size of egg may also be ascertained; the pens used for small special matings, etc., etc. Pens 5 feet by 3 feet will, at a pinch, hold four birds temporarily, although three are preferable.

Laying sheds.—These are to accommodate the bulk of the flock, consequently all labor-saving devices should be carefully considered. Whilst the practice of running large flocks together tends to reduce the labor, it is an undoubted fact that better returns are more readily obtained from smaller mobs. The birds seem to lay better and can undoubtedly be more easily supervised in small numbers. In every flock there are a proportion of both greedy, and also shy, feeders, and it is an advantage to try to pen birds of similar habits together. These sheds should face east, and be covered up for about 3 feet from the ground in front.

On a properly managed poultry farm some system of bookkeeping is essential. The simpler the system adopted the greater the likelihood of the transactions being entered regularly and accurately. The principal expenditure is incurred by purchase of foodstuffs, and the main source of revenue is from the sale of eggs. Accounts should be kept showing purchase of foodstuffs, materials bought for repairs and renewals (apart from new buildings, which are a charge on capital account and not current account), fuel or power used for heating incubators, brooders, or working machinery, cartages and freights, advertising, labor, etc., and on the credit side the sale of eggs, market birds, and stud sales. The net profit is the surplus after all expenses have been paid, including interest on capital or on loans.—From Bulletin issued by the Dept. of Agriculture, Victoria.

This well-proportioned Australorp Cock, from tested Stock, headed one of the breeding pens at Messrs. A. Siede & Sons' Highett Poultry Farm, this season.

London Fruit Trade.—Messrs. Dan Wuille & Co. Ltd. recently completed the extensions to and rebuilding of their premises at 100,104 Long Acre, Covent Garden, London. The storage space has been enlarged to a total of 21,190 sq. ft. The premises are so arranged as to give every facility for delivery, display, storage, etc. The firm has branches at Liverpool, Manchester, Glasgow, Newcastle-on-Tyne, Hull, Cardiff, Bristol, Leeds and Birmingham.

TASMANIA.

State Fruit Advisory Board.

A MEETING of the newly-elected State Fruit Advisory Board was held at Hobart on December 18. There were present:—Messrs. B. J. Pearsall, M.H.A., B. H. Saunders, A. H. Weedon, O. J. Morrisby, M. Calvert, J. H. Astell, F. Harrison, W. H. Calvert, M.L.C., and P. H. Thomas (Secretary). In addition to those present was Mr. N. B. Barnett representing the Tasmanian Agricultural Bureau.

Office Bearers.—Office bearers were elected as follows:—Chairman: Mr. B. J. Pearsall, M.H.A.; Executive: Messrs. B. J. Pearsall, W. H. Calvert and F. Harrison; Secretary: Mr. P. H. Thomas.

Australian Export Association.—The report of the Secretary, giving details of the Australian Apple and Pear Export Conference in Melbourne, was received, and it was decided that a copy of the proposed constitution be circulated amongst board members for consideration. A vote of appreciation was accorded to delegates for their services.

Defence Fund.—It was decided, after hearing legal advice to advise applicants that the board had no power to refund any moneys collected for the purposes of the fund.

Packing Instruction.—On behalf of the Director of Agriculture the Chief Horticulturist submitted a scheme of packing shed inspection and instruction designed to improve the standard of exports. The report was adopted.

Overseas Market Supervision.—After expressing appreciation of the services of the Agent-General in connection with Tasmanian fruit imports into the United Kingdom, it was decided, on the motion of Messrs. Astell and Morrisby that a Trade Commissioner be appointed to act on the overseas market in conjunction with the Agent-General.

Advances to Orchardists.—It was decided to ask the Government to give sympathetic consideration to the request received from orchardists for the suspension of repayments of loans under the Advances to Orchardists Act, 1925, owing to losses generally experienced in the 1930 season.

Meetings at Launceston.—Mr. Weedon gave notice of motion as follows:—"That in future every third meeting of the board be held in Launceston."

PEACH GROWING INDUSTRY.

Dehydration Would Save Waste.

Owing to the large quantities of fruit which are coming on to the market, the question of drying and dehydration has again come prominently before growers. By drying the fruit, practically all that is now wasted would be saved.

Instead of the heavy expenses involved in canning, the individual grower can instal an efficient type of dehydrator and process the crop when ripe—without the expense of cases, cartage to canneries and general canning expenses.

The dried product could be put into bags or boxes and stored on the growers' own property. In the dried product all the natural properties and flavor of the fruit are retained: only the water is taken out of the fruit, which reduces it to about one-fifth of its weight and bulk—an enormous saving in handling storage and freight.

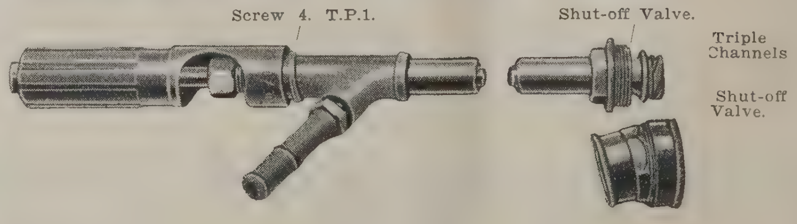
It has been well said that "No man knows what he can do until he tries, and few try their best till they are compelled."

-LEMONS-
We are the largest Buyers in Australasia
C. M. BROOKE & SONS
73 Whiteman St., South Melbourne, Vic.

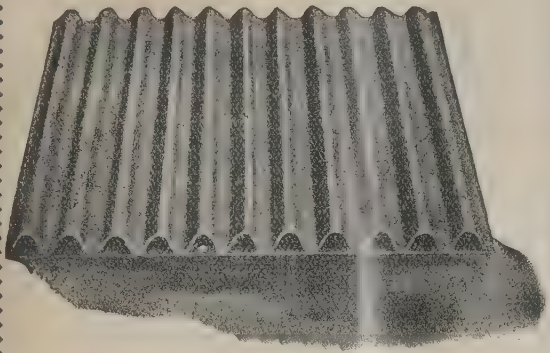
PATENTS
GEORGE A. U'REN
PATENT ATTORNEY
"HENTY HOUSE," 499 LITTLE COLLINS ST.
MELBOURNE.

GENUINE
"BLACK LEAF 40"
(Nicotine Sulphate)
Distributors
The Producers' Co-operative Distributing Society Ltd.
Melbourne, Sydney, Leeton, Newcastle Etc.

COMET IMPROVED SPRAY GUN
Can be adjusted to any variety of spray for width or distance, and guaranteed to reach the top of the highest tree.
Both time and material can be saved by using this gun. All Gunmetal, non-corroding.
Note the advantages on the illustration.
Sole Agents:
SCOTT & EDWARDS
Fruit Exporters
129 King St., Melbourne


Screw 4. T.P.1.
Shut-off Valve.
Triple Channels
Shut-off Valve.
Length, 24 inches.
Detachable Head with Angle.

Price £3/3/-



Corrugated Strawboard

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Apple Case Linings

are a proven preventative of

BRUISED FRUIT

Years of study in the packing of Fruit and Fruit Products aided by modern and accurate mechanical equipment produces corrugations of uniform strength and resilience, ensuring a safe and clean pack at a low cost.

The first glance at your Product by a purchaser when so packed ensures a better price.

Full Particulars on application to:—

J. FIELDING & Co. Ltd.

Buckingham and Chalmers Streets,
SYDNEY - - N.S.W.

OVERSEAS TRADE WITH MANCHESTER.

(Editor, "The Fruit World," Melbourne, Vic.)

Sir,—As a matter of interest to primary producers, shippers and others, I enclose a memo which embodies a few of the principal items included in the latest official advices I have received from the Manchester Ship Canal Co.

The prevailing trade depression and resulting economic pressure affecting some of the principal British industries, appears to be causing shippers and distributors to seek more closely the most economical channels of distribution.

The increasing extent to which British outports such as Manchester are being used as distributing centres—points a moral to Australian producers and shippers who have hitherto allowed London speculative merchants and importers to secure and retain an excessive percentage of their export trades.—Yours, etc.,

W. J. WADE,
Representative in Australia and N.Z. for the Port of Manchester.

The report referred to is as follows:—

Official advices received from the Manchester Ship Canal Company indicate that the Port of Manchester continues to make progress as a market and distributing centre for raw material and other commodities required in the densely populated industrial areas which the port is so favorably situated for serving.

During recent years important developments have taken place at Ellesmere Port, which is situated about six miles from the seaward end of the Ship Canal. A special dock has been constructed for the discharge of oil and low-flash motor spirit; these special facilities have resulted in Manchester gaining second place amongst the British ports—next only to London for the receipt of oil and motor spirit.

The quantity received last year exceeded the previous year's figures by over 100,000 tons.

A new grain elevator was recently completed, equipped with all the most modern improvements. The total quantity handled by the company's three elevators exceeds 600,000 tons per annum.

Operations were commenced last month at paper mills recently erected—the greater part of the first shipment of 30,000 bales of wood pulp, weighing 6,000 tons, was discharged at Ellesmere Port for these mills.

The percentage of United Kingdom imports of American cotton shipped direct to Manchester, rose from 21 per cent. in 1928/29, to 27 per cent. during the last season; the percentages of Egyptian cotton imported direct rose from 21 per cent. to 36 per cent., an actual increase of 12,000 bales. Arrivals of East Indian cotton amounted to over 24,000 bales, against 11,000 in the corresponding period of the previous year.

The quantity of general cargo handled inward and outward was satisfactory, despite the prevailing trade depression in many industries in the north and midlands.

A new Manchester-Northern Pacific Coast Service was inaugurated this month, this making three lines of steamers now engaged on that route.

It is an anomaly that whilst wheat, cotton, oils and motor spirit, timber, and many other commodities required in the Manchester area are shipped direct to that port, almost all the Australian meat, butter, cheese, fruit and other primary produce consumed in the area is forwarded via London and other ports, involving manifold handling and excessive transport charges.

Fruitgrowers, Exporters

Throughout Australia and New Zealand

SEND YOUR

APPLES, PEARS, ORANGES

TO

T. S. JOHNSON & CO.

Fruit Salesmen

ESTABLISHED IN

Liverpool, Manchester, Hull, Leeds, Sheffield

A Population of 40 million people, all large fruit eaters, is reached through these centres.

Some Good Reasons why Australian Fruit should be sent to

LIVERPOOL, MANCHESTER, AND HULL

(1) These ports serve the large populations in the North and Midlands of England, also Scotland, Ireland, and Continental Markets.

(2) Some of the largest coal fields are situated in these centres; the hard-working population are big fruit-eaters.

(3) Quick unloading and despatch of fruit are provided.

(4) Cold storage facilities are available.

(5) Direct shipments to Liverpool, Manchester and Hull save extra handling charges as is the case when fruit is transhipped from London.

(6) Shipments should be made to T. S. Johnson & Co., because they give you the choice of the three ports and their efficient Selling Organisations which are established therein.

(7) T. S. Johnson & Co.'s regular circle of buyers and wide distributing channels enables them to secure highest prices.

(8) The way to develop new markets is to concentrate on those British outports which are earnestly striving to increase their trade in fruit with Australia.

WRITE FOR ADDITIONAL INFORMATION.

AGENTS :

VICTORIA.—Messrs. J. B. MILLS & CO., Aberdeen House, 528 Collins St., Melb.
TASMANIA.—Messrs. E. R. COTTIER PTY. LTD., 82 Collins Street, Hobart.
AGENTS WANTED FOR SOUTH AUSTRALIA AND WEST AUSTRALIA.

GOOD FRUIT SELLS ITSELF.

Excellent fruit, well packed and graded, sells itself. If every grower sent fruit to the market that was as well packed and had the same attractiveness as the Tomatoes sent by Mr. M. Packer, of Paradise, South Australia, then surely the agents would be in Paradise. The Tomatoes were grown under glass, and sent to Mr. H. Wilson at the Wholesale Fruit market, who had no difficulty in disposing of them at good prices.

M. ASVARISCH

FRUIT BROKER

Copenhagen - Denmark

Consignments Received. Jorks Passage.
Telegraphic Address: Asvarisch, Copenhagen.

Inquiries for Victoria and South Australia.
to
J. B. MILLS & CO.
528 Collins Street, Melbourne

SOUTH AUSTRALIA.

Blackwood Experiment Orchard.—At a recent Conference of the Hills branch of the Bureau of Agriculture in S. Australia, a resolution was carried expressing appreciation of the good work carried on at the Blackwood experiment orchard and requesting the Government to provide sufficient funds to ensure continuity of the work.

Hay Stack Covers

for covering Hay Stacks, etc., Onions, Wheat, Wool, Lucerne, etc., also as a Tarpaulin.

Price: 3-Star.		Price: 4-Star.	
12 x 20	£2 4 6	12 x 20	£3 3 6
12 x 24	£2 15 6	12 x 24	£3 17 0
12 x 27	£3 5 0	12 x 27	£4 4 0
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18 x 20	£3 11 0	18 x 20	£4 14 0
18 x 24	£4 5 6	18 x 24	£5 12 0
18 x 27	£4 15 6	18 x 27	£6 5 6
18 x 30	£5 4 6	18 x 30	£6 18 0
18 x 33	£5 12 0	18 x 33	£7 11 6
21 x 30	£5 19 6	21 x 30	£7 19 6
21 x 33	£6 10 6	21 x 33	£8 16 0
22 x 24	£5 10 6	22 x 24	6 18 0

Size 22 x 24, waggon size only, includes ropes, other sizes, ropes 3/6 extra per cover.

Special Sizes Made to Order.

Also Duck Tarpaulins, Verandah Blinds, Car Covers, Window Blinds, and all Canvas Goods.
Please write for full list.

The WYETT Mfg. Co. Pty. Ltd.
21-23 Bellarine Street, Geelong, Vic.
Secondhand Sacks for Sale.
Manufacturers of all Descriptions of Canvas Goods.

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Grown for Sale by
C. A. Nobelius & Sons Pty. Ltd.
Gembrook Nurseries,
EMERALD, VICTORIA

Telephone: Ringwood 171 Catalogue on Application
Inspection Invited

"FRUIT WORLD ANNUAL."

Comprehensive review of Australian and New Zealand fruit industry

"The Fruit World," Box 1944 G.P.O., Melbourne.

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Fruit, Produce and Commission Agents
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(Also at 172 Little Bourke Street) G.P.O. Box No. 795 Melbourne.
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South Aust.: Messrs. George Selth & Co. Ltd., Adelaide.

West Aust.: Messrs. Paterson & Co., Ltd., Perth.

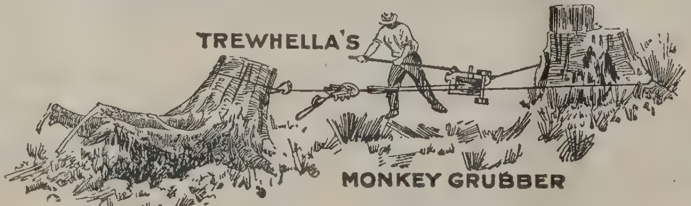
Tasmania: Messrs. H. Jones & Co. Ltd., Hobart.

ARE YOU GRUBBING?

Previous experience had convinced me that to be really efficient a grubbing machine should have ample power and ropes that will meet the heavy demands required of them. I found that shovel and axe work is very costly either by itself or in conjunction with a machine. The machine that offered these features, with a host of others, was **THE "MONKEY" GRUBBER.**

It gave me the power of 260 pairs of hands in a simple and compact form; the lever is short, so that I am able to stand firm-footed and get the full stroke. There are two speeds in the machine, as well as an automatic release that allows me to let off a strain, or as the machine will work in any position, it comes in for all jobs that would require a chain block. It is taken to the job on a pair of wheels like a barn truck, and is rigged for work in a few minutes. The ropes are in lengths that I find easy to handle, and each one is fitted with hook and loop couplings, so simple and absolutely IT for effectiveness. The makers have included a sturdy snatch block with a novel method of securing to the ropes, and also a fine type of firm gripping rope shortener. The latter makes it very easy to accommodate the lengths of rope to the tree or stump being pulled, and is quickly released from the rope. The combination of so many time and labor saving features makes the "Monkey" Grubber a superior grubbing outfit.

REMEMBER FOR YOUR GRUBBING THERE'S ONLY



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MANCHESTER

{Via the Manchester Ship Canal}

Geographically situated in the heart of England's principal industrial area, the port is the best and cheapest centre for serving 12 million consumers and for the export of manufactured goods they produce.

Canal and Docks 28 feet uniform depth; modern equipment designed to expedite receipt and distribution of perishable produce; all berths connected with main line railway systems.

Imported Fruit Sale Room, Manchester.

A sale in progress attended by wholesale merchants from all the principal cities and towns in the North and Midlands; upwards of 100,000 packages have been sold by auction in these rooms in a day. The lifts in the left foreground convey samples for inspection from rooms below.

Ship Direct to Manchester

The Commercial Hub of the North and Midlands.

The port which has more consumers within 75 miles radius of its markets than there are in the corresponding radius around London.

This enormous population requires large quantities of imported fruit and other produce, and much of that which is landed in London and other ports is ultimately railed or transhipped by steamer to Manchester markets for distribution. The producer pays (directly or indirectly) the extra transport charges involved, plus the original importers' commissions and profits.

With few exceptions, the average prices realised at Manchester for Australian and Tasmanian Apples are higher than at any other British port; price records extracted from the Weekly Market Reports (issued by British Ministry of Agriculture), as also addresses of Manchester fruit brokers and merchants, and all other information re port and selling charges, etc., will be supplied on application to:—

CAPT. W. J. WADE
8 BRIDGE STREET - - - SYDNEY, N.S.W.

Cables & Telegrams: Portoman," Sydney.

T. J. POUPART LTD.

COVENT GARDEN
LONDON, W.C.2.

The Largest firm of

FRUIT SALESMEN
IN GREAT BRITAIN

Sales by Private Treaty only give BEST RESULTS. Commission the exclusive basis. Selling Agencies everywhere. All the leading growers and Growers' Organisations use the

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POUPART **T.J.P.** SALES

TRADE MARK

SERVICE

Special Departments staffed with Trained Salesmen control the sale of every description of Outdoor and Hothouse Fruits

The House of Poupart handle Fruit from every Producing Centre in the world. Fruitgrowers the world over avail yourselves of
: : THE POUPART SELLING ORGANISATION : :

BRANCHES:

T. J. POUPART LTD.,
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T. J. POUPART LTD.,
46 Fish Street Hill,
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(For Dried and Canned Produce)

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(NORTHERN) LTD.,
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SOUTHAMPTON.

T. J. POUPART
(NORTHERN) LTD.,
71 Humber Street,
HULL.

Tasmanian Growers ship through Eric Burgess Pty. Ltd., 88 Collins Street, Hobart.
Victorian Growers ship through Fred J. Andrew, 416 Little Collins Street, Melbourne.
South Australian Growers ship through A. W. Bowen & Co., Commercial Building, 9 French Street, Adelaide.
Western Australian Growers ship through Harvey G. Rae, National Mutual Chambers, 81 St. George's Terrace, Perth, Western Australia.
New South Wales Growers ship through C. Geo. Kellaway & Son, Office 25, City Fruit Markets, Sydney
New Zealand Growers ship through Griffin & O'Brien, P.O. Box 104, 89 Hardy Street, Nelson.

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N.S.W. Agents.—The Australian Fruit and Produce Co., Fruit Exchange, Sydney.

Queensland Agents. — The Australian Fruit and Produce Co., Fruit Exchange, Brisbane.

Tasmanian Agents.—W. H. Ikin & Son, Hobart.

South Australian Agents. — Silbert, Sharp, and Bishop, Rundle-street, Adelaide.

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Mr. J. W. Barker, a well-known Victorian fruit exporter just returned from a trip, writes on the new fruit market in London, as follows:—

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Editorial Chats

APPLE AND PEAR EXPORT COUNCIL.

A FORWARD STEP was made when the recent Conference of Australian Apple and Pear exporters decided to form an Australian-wide Council in order to deal with export matters from a Commonwealth viewpoint. A constitution was adopted giving State representation on the basis of the quantity shipped. Tasmania and Victoria have now officially adopted the constitution and become members.

March 31 was the date decided on for foundation members to notify their willingness to join, and it is anticipated that before the date mentioned all the exporting States will link up.

There is much useful work awaiting attention which can only be done from an all-Australian viewpoint.

MR. THEODORE SOWS DISCORD.

PRIMARY PRODUCERS are following the political situation very closely. During the inevitable period of deflation in Australia in consonance with world conditions, a matter of first importance is that of our national credit.

The action of the Prime Minister (Mr. Scullin) and the Federal Government in reappointing Mr. Theodore as Treasurer has caused the keenest regret throughout Australia. Mr. Theodore is at present under a cloud because of the adverse report of the recent Royal Commission in Queensland, and until his name has been cleared it is a matter of distinct regret that he should be found willing to accept the vitally important position as Treasurer of the Commonwealth.

Concurrently came the resignations of Mr. Lyons (Acting Treasurer) and Mr. Fenton (Minister for Customs).

Australia will win through her problems by a spirit of goodwill and a willingness for everyone to take his or her share of the burden; it is a thousand pities that a spirit of discord has been sown by Mr. Theodore's readmission to the Federal Cabinet.

THE VALUE OF RESEARCH.

THE RESEARCH COMMITTEE of the Victorian Fruit Marketing Association, consisting of the grower members of the Executive of that body (with power to add to their number) has commenced a work which is fraught with possibilities of great good to the industry. Mr. J. W. Bailey is to be congratulated on bringing this matter forward.

This first subject to be tackled is that of biennial cropping. A cultural programme is being drafted which, if adopted, should greatly assist growers. The subject of thrips also looms largely, and on this subject the services of scientists will be needed.

There are other problems which will from now onwards receive expert attention, and growers are invited to send in their experiences and suggestions.

This Research Committee has the goodwill of the Department of Agriculture, the Council for Scientific and Industrial Research and others who are interested in the sound development of the fruit industry.

BERRY FRUIT COLD STORAGE.

THE COLD STORAGE OF BERRY FRUITS is a subject which is sure to receive close attention. The article in this issue tells of the successful tests in Victoria and the huge business which has been developed in the United States. The process is simple. There are no technical or mechanical difficulties, and it is hoped that the growers will take the initiative and unite in a programme which has first-rate opportunities for stabilising the industry.

ARBITRATION COURT AWARDS.

Fruitgrowers Seek Relief.

Suspension of Award, or 25 per Cent. Wage Cut.

Applications have been lodged at the Commonwealth Arbitration Court by the Mildura and Northern Victorian Fruitgrowers' Associations for an order suspending the Australian Workers' Union's awards, on the ground that the position of fruitgrowers is desperate.

Alternatively, fruitgrowers ask for further reductions in wages of 25 per cent.

The wages of these employees were substantially reduced by Chief Judge Dethridge about twelve months ago.

The Northern Victorian Fruitgrowers' Association embraces the Associations of Ardmona, Shepparton, Merrigum, Lancaster, Kyabram and Tatura.

FROZEN GRAPE JUICE.

The Vita-Fruit Products, Inc., Lodi, Cal., U.S.A., have completed a new quick-freezing plant and solid frozen Grape juice is now being turned out at the rate of 30,000 gallons a day. This is thought to be the commencement of a trade in frozen juices of all kinds, to be held in low temperature warehouses until needed, and then thawed and bottled as the market demands. This should level out prices for juice over the year and eliminate a glut during the picking season.

This plant has eight large cold storage rooms, heavily insulated with cork; a constant sub-zero temperature can be maintained. Each is 90 feet long, 20 feet wide and 18 feet high, and each holds 10,000 ten-gallon cans of Grape juice, a total storage capacity of 800,000 gallons.

The juice runs first through a series of refrigerated coils, designed to keep it liquid at the lowest temperature possible. The coils, in contact with cold brine, reduce the temperature of the juice by 30 degrees in a few minutes. An oil drum filler automatically fills and weighs metal cans. These are further cooled by a cold air blast, chilled by being blown through brine spray in the control rooms below. The cans of juice then go to storage rooms, which may be held at from zero to 20 degrees Fahr.

The view is expressed that this quick frozen juice can be stored for years without impairing its flavor or taste, and as no preservative is added, it will have all the properties of fresh juice when thawed.

. . . The Open Forum . . .

Fruitgrowers and others connected with the industry are invited to contribute their views to the "Fruit World" through the Open Forum.

This paper does not necessarily identify itself with the views here expressed, and reserves the right to reject or curtail, if necessary, any articles submitted. These should be on seasonable or topical subjects.

PEAR CONTAINER.

The Editor, "Fruit World," Melbourne.

Sir,—Some time ago, there appeared in your paper the report of a statement made by someone connected with Pear exports, recommending growers to use the long flat bushel case (26 x 14¾ x 6) in preference to any other container, because it was favored by overseas traders. I stated at the time that, from my knowledge, the opinion expressed was unfounded, but, in order to have this controversial matter definitely settled, I wrote various overseas organisations on November 6, 1930, asking for a definite pronouncement.

My letter of November 6, 1930, to each Association read:—

"The members of your Association are aware that in the past, a number of different containers have been used for the export of Pears from Australia, and, as growers are desirous of using a uniform container for the purpose, of such shape, construction, and timber as is most acceptable to the members of your trade, I have been requested to write you to ask whether you would be good enough to request your members to express an opinion as to the kind of container they prefer.

"Hitherto the following containers have been used for the export of Pears from Australia:—(a) The long flat box; (b) the ordinary pine case packed oregon style; (c) the ordinary 'dump' Australian box made of hardwood; (d) the same case made of softwood; (e) trays made of hardwood; (f) softwood trays; (g) half boxes.

"There is also a suggestion that the three-quarter Pear box used in U.S.A. should receive consideration.

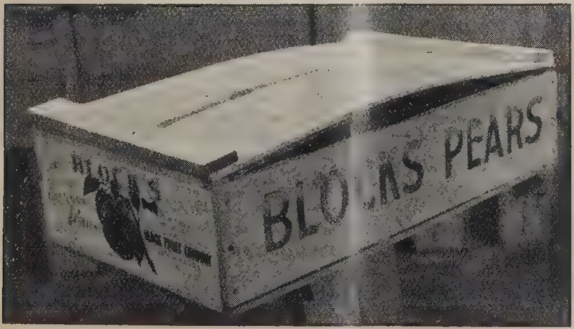

Fig. 1—Exporting American Pears.—Half box "Canadian Standard" case lidded.

"Your reply, giving the considered opinion of the members of your Association, will be much appreciated, and later passed on to Australian growers."

On December 9 the Liverpool and District Fruit Buyers' Association replied:—

"Your letter of November 6 was placed before our board at their meeting held yesterday. After discussion, the board were unanimously of opinion that the most suitable containers are the boxes made of pine (oregon style), weights 40lb. and 20lb."

On December 10 the London Fruit Exchange Brokers' Association replied:—

"Your letter of the 6th ult. was placed before the brokers at their committee meeting this morning. They wish me to inform you that they much prefer cases and half-cases packed Oregon style, and also that Canadian wood is preferable."

On December 12 the National Federation Retail Fruiterers, Florists and Fishmongers (headquarters Liverpool) replied:—

"With reference to your communication of the 6th ult., regarding Pear containers, the half-box softwood Oregon style pack is found from experience to be the most satisfactory method of packing."

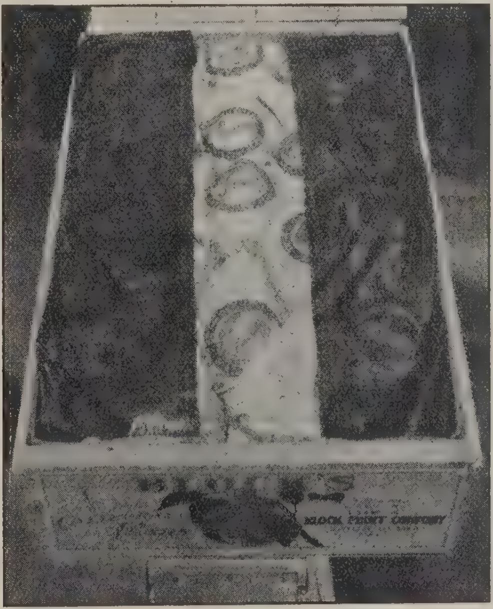

Fig. 2.—Same box as Fig. 1. With lid removed. This is known in the British trade as the "Oregon style" of packing.

On December 12 the Retail Fruiterers and Florists' Association (London) wrote:—

"My Association has given careful consideration to your letter of November 6, 1930. We are of opinion that the universal adoption of the bushel and half-bushel softwood case is most desirable.

"In forwarding this opinion, I am asked to stress the importance of all packages sent to this country being packed tight, thus minimising the chance of damage to the fruit in transit."

N.B.—Although no definite shape is mentioned in this last letter, it is clear that by referring to "universal adoption" the Canadian standard bushel and the half-bushel are indicated, because these containers are generally used by other exporting countries.

It will be seen that these letters are from important and comprehensive organisations dealing with the various phases of the fruit business in Great Britain. One is from the London Brokers' Association, who are the most important distributors of imported fruit from overseas. Another is from the Buyers' Association which covers U.K. wholesalers, and the other two letters are from retailers' associations, one from the south in London, and the other from the north in Liverpool.

It will also be seen that all the opinions expressed are unanimous in recommending the Oregon pack, which is the Canadian standard bushel or half-bushel, with bulge to ensure tight packing.

Yours faithfully, H. G. COLOMBIE.

BIENNIAL CROPPING.

(To the Editor of the "Fruit World.")

Dear Sir,—Without doubt the success of the Apple-growing industry as a whole depends to a large extent upon its export trade. We must place on the overseas markets a **continuous** supply of first-quality fruit.

To put this "continuity of supply" into practice we have to try to overcome our difficulties with regard to biennial cropping.

It may be that the influences concerned in this development are:—Root stocks, manuring, pruning, thinning, effective pollination.

This, and other light crop seasons have clearly shown that the last is certainly not the least cause of our trouble.

Now that the crop is showing on the trees, and the influence of cross-pollination is easily to be seen, could not some evidence be collected from the various fruit-growing districts, in order to establish some definite facts, as to what part effective pollination plays in regard to alternate cropping.

Some of the questions that might be asked on this subject are:—

1. Is cross-pollination more necessary in some years than others?
2. Is it advisable to have more than one variety as a fertilising agent for Jonathan?
3. Do varieties vary in their fertilising value in different districts?
4. Are some varieties self-fertile in some districts and not in others?

So far as this particular district is concerned, Granny Smith, and Munro's Favorite greatly influenced the setting of Jonathans, even where the Jonathans had a heavy crop last year.

This question of biennial cropping is a vital one to the industry, and it would be interesting to have views from other readers of your valuable paper.—Yours faithfully,

Somerville, Vic., 20/1/31. THOS. G. TYLER.

TAXING THE INVENTOR.

(To the Editor, "Fruit World.")

Sir,—A Bill was passed through both Houses of the Federal Parliament, in one week, in December last, to increase the fees payable upon patent applications, and to impose additional taxation upon patents. This Bill becomes operative on February 2.

The inventor is a creative thinker. He does his share when he produces an invention at all. Yet, notwithstanding that the public has always gained the greatest benefit from invention, inventors and patentees are, in future, to be forced to bear the whole cost of the administration of the Patent Office, and to provide a surplus for others to spend.

It is intolerable to think that iniquitous taxation is to be imposed upon the brains of the country at a time when the greatest encouragement should be given to every means for effecting industrial economy, increasing efficiency and stimulating business. The taxation of invention and extortionate Departmental fees for obtaining patents cannot be defended on any ground whatever.

Patent Attorneys have fought for 25 years for a reduction of the unjust Government impost made to obtain a patent. A reduction and not an increase was never more imperative than at present. May they rely upon the press to resist to the utmost these pernicious taxation depredations and endeavor to obtain the rescission of a very unfair measure.—Yours faithfully,

499 Little Collins-street, Melbourne. G. A. U'REN.

BUD DEVELOPMENT.

(To the Editor, "Fruit World.")

Dear Sir,—I was interested to read in your issue of January 1, a letter under the heading of "Bud Development."

The subject of irregular cropping of fruit trees is one to which this Department has given a great deal of attention during the last few years; and several field experiments are in progress in various parts of Victoria. In addition, microscopical determination of bud development in Apples, Pears, Peaches, Plums and Apricots is being carried out in collaboration with Mr. C. Barnard, of the C.S.I.R. Division of Plant Industry.

On this latter aspect definite information should be available this year.

My real reason for writing this letter is to question the advisability of the practice of growers "to give the tree a 'kick'" with a 1 cwt. sulphate of ammonia dressing with this (the late) irrigation, for the purpose of helping the tree to mature buds that may not otherwise develop.

While it is generally considered that the balance between the nitrogen coming from the roots, and the carbohydrates (i.e., sugars, starches, and so on), built up in the leaves is important in the initiation, and development of fruit buds for the ensuing year, it is not felt that in general, nitrogen applications are necessary late in the season.

If such an application produced growth in the tree, it would quite possibly cause a **lowering** of the tree's reserve of carbohydrates; and so check the development of the fruit buds instead of aiding them.

On the other hand, high nitrogen at flowering time is thought to promote heavy setting; and in most cases an application of quickly available nitrogen a fortnight prior to flowering is beneficial.

In the manurial treatment of irregular bearing trees, nitrogen may afford us some control of blossoming, and therefore cropping.

Theoretically, nitrogen applications in the off year—before blooming to increase the set in that year, and just prior to the initiation of the blossom buds (roughly December and January) to inhibit their formation for the following year, would appear to be favorable to more regular flowering and cropping. This is one of the lines being followed in our field experiments. No results are yet to hand.

I hope growers will continue to give their close attention to this, the greatest problem in Victorian orchards.

F. M. READ, M.Agr.Sc.,
Horticultural Research Officer.
Dept. of Agriculture, Melbourne.

Cold Storage of Berry Fruits.

By Adding Sugar, Then Freezing, Berry Fruits Can be Available all the Year.

America has a Huge Trade in Frozen Berries. Their Example Could be Followed in Australia.

Passion Fruit Should also be Pulped and Frozen.

THE COLD STORAGE OF BERRY FRUITS formed the subject of a helpful wireless talk recently by Mr. G. B. Tindale, B.Ag.Sc., Cold Storage Research Officer of the Victorian Department of Agriculture. Mr. Tindale stated: "I shall refer to the storage possibilities of berry fruits, the most highly perishable of all the fruits. It is owing to their highly perishable nature that they must be disposed of as soon as they are ripe.

The season for these berry fruits is very brief during which we frequently experience gluts, while for the rest of the year, berries are unprocurable, except in the form of preserves.

If the growers were able to store their berries out of season, the berry fruit growing industry would be placed on an entirely different footing. Not only would gluts be avoided, but by opening up an all the year round trade in berries, consumption would be enormously increased, thus making for a great expansion in the industry.

While such a possibility may appear beyond the realms of practical politics, yet such is not the case, for already a large business has been developed in America, storing berries and distributing them throughout the year. The method is indeed very simple. It has been demonstrated here with excellent results.

Briefly the method is to combine the preservative actions of cold temperatures and sugar.

It should be pointed out here that it is not possible to cool store berries like other fruits, on account of the certainty of the berries fermenting on being attacked by mould. Ordinary cool storage temperatures that are just above the freezing point, are not low enough to prevent fermentation or mould growth, although of course, such growth is greatly retarded at such temperatures.

Berries Must be Frozen.

In order to entirely prevent fermentation, it would be necessary to freeze the berries hard. They can be kept indefinitely in such a condition, but this method of storage would necessitate distribution in the frozen state, otherwise the berries would ferment as soon as they thawed.

Returning now to the method of cold storage with the addition of sugar, the actual procedure is very simple.

First a layer of sound berries is placed in the bottom of a barrel.

This is then covered by a layer of sugar, using ¾ to 1 lb. of sugar to 1 lb. of berries.

Alternate layers of berries and sugar are added until the barrel is filled.

The barrels are then stored at a temperature of 25 deg. F., which is above the freezing point of the mixture.

The sugar added should be already cooled to the freezing point, so as to cool the berries as soon as possible, otherwise fermentation would set up within the barrel, before the cold could penetrate.

After a little while the sugar is gradually dissolved into the juice which exudes from the berries, and so the whole contents become a uniform mass of fruit pulp, which has all the properties of fresh fruit.

The sugar serves a double purpose, first by lowering the freezing point of the mixture and so enable one to store at a lower temperature without freezing, and secondly it acts as a powerful preservative on its own account.

One may argue at this juncture that the expense of adding sugar would be very great, but this is not so, for it should be remembered that the sugar is no more expensive than the fruit, and that one pound of sugar added to one pound of berries would make two pounds of fruit pulp, for there would be no evaporation losses. Then, whatever use the berry pulp be finally put to, it is ready for immediate use without the addition of any further sugar.

The cost of storage per pound of pulp would be extremely low on account of the small space occupied in proportion to its weight.

Big Trade With Confectioners.

Large companies are at present operating on these lines in America. They buy the growers' crops and treat them as already described. They are then disposed of throughout the year in a condition equal to that of fresh fruit. There is no falling off in either flavor or aroma. The largest sales are made to restaurants and soda fountain proprietors. Although a considerable amount of trade is done with householders, delivering small quantities at a time, such as milk is delivered now.

The great value of this method is that owing to the very intimate mixture of the berries and sugar, the pulp will, on removal from store, stand for some days before fermenting or going mouldy. Thus the element of risk associated with the disposal of highly perishable foodstuffs is eliminated. Of course, one would aim at removing from store amounts sufficient for immediate use, but should any remain unsold, it would still be good for a few days, especially if stored in a cool place.

Stored Loganberries, Raspberries and Strawberries are in great demand by restaurants, as the consuming public greatly appreciate the opportunities of obtaining berry pies and tarts out of season, particularly during the winter and later in the year, when Apples are about the only fruit procurable for such purposes.

At that time of the year, however, Apples have lost their flavor. Large quantities of stored berries are disposed of to soda fountain proprietors for use in sundaes and pure fruit drinks. The demand for pure fruit drinks is increasing, and there is no reason why pure Raspberry drinks for instance should not be as popular as citrus drinks. The pulp is placed before the public in large glass containers, and the juice is quickly extracted for each customer, as he orders his drink.

Thus it will be seen that there are great openings for an all the year round sale of berry fruits, and that this can be provided there is no doubt. What is lacking at the moment is an organisation to handle the fruit, that is, a body to secure the fruit, store the fruit, and distribute it. Growers acting individually would scarcely be able to cope with the business, but a growers' organisation should be able to develop the business. Should anyone desire any further details regarding the process, information would be gladly supplied by making application to the Director of Agriculture, Treasury Buildings, Melbourne.

* * *

Also Freeze Passionfruit Pulp.

THE NEXT FRUIT which I wish to deal with is the Passionfruit. While it is possible to store most fruits for varying intervals of time, the storage of Passionfruit has proved to be quite futile, indeed large sums of money have been lost from time to time by people who have attempted to store Passionfruit. There is a strong inducement to store Passionfruit on account of the fact that prices rise considerably when once the season is over. Why is it then, that Passionfruit cannot be stored like other fruits?

To answer this it is necessary to refer to the fact that a fruit is a living body, and continues to live, even though picked from the tree. The life after picking is, however, limited, and the end is marked by a softening of the tissues, the fruit is then commonly referred to as being over-ripe. When a fruit reaches such a condition, it is unable to resist mould or bacterial attack, so an over-ripe fruit quickly rots. Indeed, it is one of Nature's ways that all forms of life, whether vegetable or animal, are attacked by organisms of decay when once life is extinct.

As far as fruit is concerned, the rate of living, when once the fruit is picked, is entirely a matter of temperature, and it is just here where cool storage plays its part. By keeping fruit at a low temperature the rate of living is slowed up, and so the fruit remains sound much longer.

The actual storage life, while dependent on temperature, varies tremendously among the various fruits. Apples are growing on the trees for many months before they are picked, and have a correspondingly long storage life. Passionfruit, on the other hand, are growing on the vine for a very brief period, and have an exceedingly brief storage life, amounting to only two or three weeks.

Assuming now we place the Passionfruit in store, what happens? For two or three weeks they keep excellently. This period is not long enough to make their storage a worth-while proposition.

Stored beyond this period, the fruit enters into a period of senility and finally death overtakes it. When this condition is reached, the fruit is a prey to all forms of mould attack, and it is on account of mould attack that Passionfruit, to use the words of the storemen, will not "keep."

It should be realised, however, that the presence of the moulds is an indication that the fruit is really extinct, and therefore worthless. Many experiments have been tried out with the idea of overcoming the moulds, but it is the short life of the fruit, and not the moulds where the problem lies.

Is there no method, then for storing Passionfruit? With our present knowledge it does not appear promising to store the fruit, **but there are great possibilities in the cool storage of pulp with the addition of sugar.**

Normally, to preserve Passionfruit pulp, it is necessary to sterilise by means of heat, in order to destroy the decay producing organisms, but unfortunately the flavor is altered.

The great advantage of the cool storage method to which I shall now refer, lies in the fact that the flavor and aroma are completely retained, the pulp being equal to fresh pulp.

The actual process is simplicity itself.

The pulp is scooped out of the fruit and to each pound of pulp approximately one pound of sugar is added, the whole being stirred until the sugar is dissolved. The pulp is then stored at a temperature of about 25 deg. F. As in the case of the berry fruits, the pulp will keep indefinitely, due to the combined preservative action of sugar, and the low temperatures. Another important feature is the fact that it will keep for several days after removal from store before fermenting or going mouldy.

With such a method of storage it should be possible to exploit new avenues for the disposal of Passionfruit. The possibility of export under refrigeration is one that suggests itself, and in time we may see Passionfruit pulp exported in much the same way as butter is now.

ORCHARD SANITATION.

To orchardists whose first concern is the problem of production, the many subtler aspects of orchard sanitation have little, if any, appeal. Apart from the elemental problem of drainage, the average grower devotes his attention to the tree itself as the source of the annual crop, and has little time for going out to meet pests and agents of destruction before they arrive.

Yet it is a well-known fact that, if proper regard is given to orchard sanitation, much of the ground is already covered for the prevention and eradication of fruit diseases. Most growers, for instance, know that windfalls become quickly infected with one insect or another, yet few of them will take the precaution to gather them as often as once a week, and when gathered it is not an uncommon sight to see quantities of windfall matter stacked at no great distance from the orchard, providing a breeding ground for further pests instead of being immediately destroyed by burning or some other effective means. The need of immediate destruction of fungoid pests is more often recognised.

The importance of keeping the packing sheds free of the grubs of infected fruit spinning cocoons in cracks and odd corners cannot be over-emphasised, and the provision of moth-proof fly wire screens over packing shed doors to prevent the egress of emerging moths is regarded by expert growers as a worthwhile investment.

The importance of hygienic bandaging of the trees is mostly recognised, but how many orchardists make a periodical inspection of poles, props, etc., used in the orchard to see that the bark and wood do not house grubs, cocoons or eggs.

The importance of orchard sanitation has been well set out in the recent fruit spraying manual issued by the Shell Company of Australia, copies of which may be obtained gratis by orchardists on application to the company's offices.

FACTORS WHICH DETERMINE FERTILITY.

There are many factors which influence soil fertility, but the soil which provides the best conditions for plant growth is the one in which there is a sufficiency of water, air and plant-food, and in which the conditions regarding temperature are correct. The plant must have adequate room to root development, and there must be an absence of toxic substances. Any one of these may be a limiting factor as regards fertility.

Some Notes on Fruit Tree Stocks.

(By C. G. Savage, R.D.A., Director of Fruit Culture, Department of Agriculture, N.S.W.)

THE QUESTION of which stock is most suitable for various fruits is one that has been exercising the mind of propagators probably from time immemorial, but the question has never caused so much discussion, nor has more research work been undertaken than is the case at the present time.

The results of recent research work in many countries and especially at Long Ashton and East Malling, in England, have definitely shown that not only the vigor and growth, but also the cropping propensities of the tree and the quality of the fruit may be influenced by the root stock.

Stocks may be used for a specific purpose, such as controlling of disease or pest, bringing varieties into early fruiting, while at times the range of soils and climatic conditions over which certain trees may be grown, can be extended by using stocks, which will grow under conditions not conducive to satisfactory results with the stocks commonly used for such varieties.

While acknowledging the value of stocks in the control of pests, the fact that many of the physiological disorders may be due to lack of affinity or incompatibility between stock and scion must not be lost sight of.

It is well known that certain stocks have a dwarfing influence upon the scion, especially is this true when the trees are worked some distance above the root system. Such stocks also have the tendency of causing the tree to crop at an earlier age.

Experiments at Long Ashton have shown that the scion influences the root development of the tree when the union between root stock and scion is near the root system. The influence of the scion over the root system decreases the higher the union is up the stem.

In the past the practice has been for the great majority of the Apple trees to be worked upon Northern Spy stocks, as this variety is immune to woolly aphis, is easily propagated, and roots readily. Investigations show that there are

strains of the Northern Spy,

but in the past no regard has been paid to them, nor has any great attention been given to the vigor of the tree from which stocks have been propagated. The question of suitability of the Spy stock for various types of soils and varying climatic conditions or compatibility between scons of commercial vareties has never been seriously considered.

The seedling stock to-day has many advocates who claim that larger trees and heavier crops may be produced by working the desired variety on free seedlings.

Investigators claim that many of the physioligical disorders occurring in fruits are probably due to incompatibility or lack of affinity between scion and root stock.

Methods of propagation also may have a decided influence upon the longevity as well as upon the cropping habits of the tree.

The foregoing remarks, though applied more or less to the Apple, are equally applicable to other sorts of fruits.

In passing, reference might be made to some of the physiological troubles that might be due to lack of affinity between stock and scion and to which special attention is being paid. Internal breakdown or cork of Apples, black end of Pears, and scald or internal breakdown of Plums. To determine whether this is the case or not special investigations have already been commenced.

Realising the necessity for

investigations into propagation methods

and stock problems, the fruit branch of the Department of Agriculture has undertaken this work on a comprehensive scale. The trees under investigation are the Apple, Pear, Peach, Apricot, Prune, Cherry and citrus.

To enable the work of the Branch to be conducted satisfactorily special investigational work has been planned for the Bathurst, Glen Innes, H.A. College, Narara, Grafton, Wagga and Yanco Experiment Stations. In order to gain knowledge of the behavior of the specially selected and worked trees over a wide range of both soil and climatic conditions, series of the trees are being planted in many districts upon private orchards, where growers are willing to carry out the tests to assist the Department and the fruit industry. May I here state that departmental officers have greatly appreciated the ready manner in which leading growers have willingly offered to assist in the work?

The stock investigations will be carried out at the departmental farms as follows:—

Bathurst Experiment Farm.—At this station 24 acres have been set apart for special work with Cherry, Peach and Pome fruit trees.

Glen Innes.—The work is being mainly confined to the physiological defects of Apples.

Narara Viticultural Nursery.—The stock work is being carried out with citrus trees.

Hawkesbury Agricultural College.—Citrus and stone fruit tree stocks are being tested.

Grafton Experiment Farm.—The stock investigations are being confined to citrus trees.

Wagga Experiment Farm.—The Prune stock problem is being undertaken at this farm, as well as a few trials with other stone fruits. Physiological disorders of Plums will also be undertaken.

Yanco Rice Research Station.—The stock work at this station will be carried out with citrus trees.

Investigations.

The following investigations have been planned:—

Apple.—(a) Selected strains of Northern Spy are being propagated vegetatively. Two strains have been located, one which produces red, and the other striped Apples.

The required number of stocks are being propagated as colonial strains.

(b) Free seedlings of Crab Apples are being raised from introduced seeds.

(c) Special strains of Apple stocks raised at East Malling Station are being introduced.

(d) Free seedlings are being raised from many of the commercial varieties, as well as from seeds artificially cross-fertilised.

In the first case it is thought that union between scion and seedling of the same variety should be compatible. In the second case varieties have been crossed which possess some distinct advantage as a stock. In this connection the plant breeding branch is assisting by carrying out the desired cross-fertilisation work.

(e) Method of propagation:—

(1) Layers and cuttings.

(2) Grafting on Northern Spy root.

(3) Grafting about six inches above the soil level.

The layer and cutting is to be tested out, as some growers claim that trees are stronger, longer lived and bear heavier crops when grown upon their own roots, than when worked on other stocks. Scions of the desired variety are being root grafted and planted so that the union is at ground level and also deeply buried. In the first case the tree will depend solely upon the Spy root; in the second case the scion will root and the tree will be drawing the sap supply both by means of the Spy and its own roots. The trees worked six inches above soil level will serve as checks or controls and represent the usual nursery method of propagation. The influence of scion over root stock and root stock over scion will be noted.

Pear.—(a) Selected strains of Pyrus communis (the common Pear stock that is used almost exclusively) are being propagated vegetatively. The need for work in this direction will be readily realised by the examination in the nursery row of the seedling stocks where wide variations in growth will be noticed, while in the orchard the suckering habit and irregular growth of the trees will be seen.

(b) Seedlings have ben raised of Pyrus calleryana and Pashia, and it is hoped to obtain seedlings of ussuriensis. The seedlings of P. calleryana show great dissimilarity in growth. Selections are being made, from which supplies of stocks are being raised vegetatively. P. pashia from the appearances in the nursery row appear to come true from seed. Stocks are also being raised by vegetative means.

(c) Stocks are being raised from naturally fertilised, as well as from artificially crossed seeds, as in the case of the Apple.

(d) Methods of propagation:—

(1) Layers and cuttings.

(2) Grafting above soil level.

Peach.—(a) Clonal strains of vigorous stocks are to be investigated.

(b) Seedlings are being raised from specific varieties which will be worked with scions of the same variety as the stock.

(c) Apricot and Peach stocks are being tested out side by side in the drier non-irrigated areas.

Apricot.—Little work has been planned for this fruit at present. The main work in hand being the working of varieties on Peach and Apricot seedling stock.

Prune.—(a) Strains of Myrobolan and Marianna have been located and are being raised by vegetative means.

(b) Seeds of several species have been introduced from which seedlings are being raised.

(c) Vegetatively raised stocks are being propagated from several types, other than Myrobolan and Marianna, that are claimed to be satisfactory.

(d) Methods of propagation are also being investigated.

Cherry.—(a) Selected strains of Mahaleb, Mazzard and Kentish are being raised.

The Kentish stock appears to give satisfaction over a very wide area, and has the advantage of bringing trees into early fruiting. The suckering habit is a big disadvantage. An attempt is being made to locate a Kentish strain having the desirable characteristics without the disadvantage of the suckering habit.

(b) Intermediate stem stocks are also being tested out, with a view to combining the desirable characteristics of two types of stocks and eliminating the undesirable characteristics.

Citrus.—(a) Seedlings have been raised from the sweet and sour Orange, Citronelle, Lemon, Trifoliata, Sweet Lime, Grape-fruit and Cleopatra Mandarin.

(b) Stocks are being raised by vegetative means from cuttings. From experiments already conducted with the common Lemon stock, it is found that a large percentage of both soft and hardwood cuttings can be easily struck in an ordinary propagating frame. It appears that 12 months can be saved in raising nursery stock by this method. Whether the stock raised from cuttings will prove of equal or greater value in the orchard than the seedling has yet to be demonstrated.

(c) **Native Citrus Species.**—The native species are not being neglected, as it is felt that by the use of them that the area over which citrus may be grown can be extended. In this connection seedlings of Microcitrus australis, Microcitrus australisca, Eremocitrus glauca, and Microcitrus inodera have been raised.

(d) **New Importations.**—Seeds of other species such as Citrus escelsa and acida and plants of citrus hybrids, have been and are being introduced.

(e) Layers and cuttings.

General Remarks.

The work of raising the trees is being carried out at the Viticultural Nursery, Narara, and records are being kept of the many ways in which the stocks are raised. The methods of vegetative propagation are—root and top cuttings, stooling, layering and root grafting.

Tests have also been initiated to find the best methods for raising seedlings; with Pome fruit the germination is greatly increased if the seed is cold-stored for several weeks. Stone fruit pips are also being cold-stored and the germinating percentages noted.

The behavior of the various types of stocks under varying climatic and soil conditions will be carefully noted. Such characteristics as vigor, cropping propensities, resistance to fungus diseases and insect pests, and the rooting habit will receive special attention.

Having proved that a certain

type of seedling stock

is giving outstanding results, further supplies of the type will be propagated vegetatively, probably by means of root cuttings. Where possible specimen trees of all the vegetatively raised stocks are being planted at the nursery, in order to have a "mother" tree from which propagating material might be obtained when a type proves worthy of perpetuating.

The stock question opens up a vast field for investigation, the limiting factors being the area which can be placed under experiments and the staff available to carry out the work. To thoroughly test out the question of affinity of stock and scion it would be necessary to take the whole of the commercial varieties and work them on the different stocks, but as this would make the work too unwieldy, the investigations have had to be limited to a few of the leading varieties.

Definite results cannot be expected from the investigation for some years, after which time, in the case of vegetatively raised stock, some time must elapse before commercial quantities of any particular stock will be available on a large scale.

Clean, healthy, well-grown fruit trees in all varieties are being offered in the advertisement in this issue of Mr. C. J. Goodman, Picnic Point Nurseries, Bairnsdale, Victoria. Catalogue is obtainable free on application.

Tasmanian Fruit Export.

Report of Royal Commission.

Improvements Possible by Better Organisation of Tasmanian Fruit Industry.

High Quality Fruit, Well Graded and Packed, Should Only be Shipped.

THE REPORT OF THE ROYAL COMMISSION on the Tasmanian Fruit Industry is a lengthy and well-considered document. Various suggestions for the better organising of the industry are dealt with in detail.

The report states that many of the desirable improvements could be brought about by the growers themselves.

In a final summary four points are stressed: The necessity (1) for sending high quality fruit; (2) continued research to improve overseas transport; (3) good grading and packing; (4) improved inspection.

It is further suggested that as many shipments as possible should be made from the outports, Port Huon, Beauty Point, Bell Bay, to relieve congestion at Hobart.

The terms of reference of the Commission which consisted of Mr. Justice Clark (Chairman), and Mr. C. E. H. Ferguson, were as follows:—

To enquire into and report on: (a) The method in use of allotting shipping space to fruitgrowers.

(b) The congestion of fruit on wharves at ports of shipment during the export season.

(c) The carry-over of fruit during the season.

(d) The shipping of fruit to ports other than those to which it was consigned and by vessels other than those by which it was consigned.

(e) All charges made and levied upon fruit exported or consigned for exportation.

(f) And all matters and things incidental to the foregoing.

The Industry Reviewed.

After describing the foundation of the Apple export industry in Tasmania in 1880 by Mr. W. E. Shoobridge, the growth is described to when 2,804,704 cases were shipped overseas last season. Fruitgrowers' organisations and marketing developments are described.

Reference is made to the report of the sub-committee of the State Fruit Advisory Board, which held an enquiry into the fruit industry prior to the Royal Commission being set up, in which it was stated that the Tasmanian shipping carge was 3d. per case, and the New Zealand .93 pence per case. This conclusion, the Commissioners state, is quite erroneous.

With regard to stevedoring companies, it is admitted that the Tasmanian and Northern Tasmanian Stevedoring Companies have a profitable business, but the cost to the individual grower is not very great.

Shipping Expenses.

Whilst appreciating the valuable services rendered in the various stages of fruit marketing the Commissioners expressed the opinion that the cost of the services had not come down to the irreducible minimum. On the contrary, the opinion is held that the cost could be materially reduced if the shipping of fruit were under the control of one efficient agency.

The Tasmanian system of handling fruit is stated to involve charges to the grower of 4/11 per case, as against the most favorable instance, under the New Zealand system of control, of 4/8.712d. per case; but as a set off, attention is directed to the fact that the Tasmanian grower has a right to sell f.o.b., to nominate his market, and unlimited choice of brokers, whereas the New Zealand grower, whose operations are controlled, cannot sell f.o.b. or nominate his market, and has only a limited right to nominate the broker who is to handle his fruit.

Space Allocation.

The Commissioners have dealt at length with the methods in use of allotting space to growers, and to the difficulties experienced by shipping agents because of growers making alterations to their allotments or failing to fulfil them.

The congestion on the wharf is due to a variety of causes, including the export of fruit which is unsuitable for that purpose, insufficient wharf accommodation in a heavy export year, miscalculation of stowage capacity, over-allotment of space by shipping agents, delivery by growers in excess of their allotments and various other causes.

Charges Against Agents Not Sustained.

The charges made by growers and others against individual shipping agents were held not to be sustained. The Commissioners state that in some cases the charges revealed the inherent difficulties of the business, but when the agents' account of the matter was heard it appeared that the personal fault, if any, was on the part of the grower or other shipper, and in a few cases the charges were without justification.

In a summary of the first four matters submitted for enquiry, the Commissioners state that the unsatisfactory state of affairs is due to the following:—

(1) The difficulties inherent in arranging for the shipment to a market 12,000 miles overseas of a crop of between 2,250,000 and 3,000,000 cases of fresh Apples and Pears shipped on account of about 2,000 separate consignors by as many as 42 steamers within four or five months.

(2) The export of fruit which is not suitable for the overseas markets.

(3) The disregard by growers of the provisions and instructions contained in their space applications and allotment notices and the other instructions given to them by the shipping agents from time to time, and generally the unbusinesslike way in which many of the growers do what only can be done by them.

(4) Certain defects in the procedure and method at present followed in shipping the fruit.

The difficulties in the business were not sufficiently appreciated. No system could eliminate many of the occurrences, but if the growers as a body would only read their allotment applications and notices of allotment and carry out these instructions, many of the present troubles would disappear.

Suggestions and Observations.

Under this heading the Commissioners presented the following two suggestions—on the footing that the present system under which the shipping of fruit is carried out by a number of fruit agents is continued. If one of the systems referred to later is adopted, the question of control of allotting the shipping space should present no difficulty.

Shipping Space Allocation.

(1) That the allocation of space between the several shipping agents be entrusted to a body consisting of the shipping agents and a representative or representatives of the growers.

(2) That the allotment of the space by each shipping agent amongst the growers be made by the shipping agent and a representative of the State Fruit Advisory Board.

If the space were allotted as in clause 2, it would remove all the suspicion that now exists that space is reserved by the shipping agents or allocated to brokers representatives.

The Board would need to have their representative constantly available to deal with variations.

The State Fruit Advisory Board would of course have to be prepared with modus operandi for the prompt discharge of their part of the business.

(3) All applications for space should be made in the same form (which should be settled by the shipping agents and the State Fruit Advisory Board), and they should only be made by and received from growers only.

The application should be subject to the following conditions (inter alia): (a) Applications not received by the appointed date to be rejected.

(b) No space to be allotted to any grower who has not applied on or before the appointed time.

(c) The grower to bind himself to pay freight on space not filled by him if the shipping agent is liable for same and the shipping companies claim same from the shipping agent.

These matters should be provided for on the application form, and should be rigorously enforced for if once the growers saw that the conditions were merely counsels of perfection, breaches of them would become the rule and things would be no better than they are now.

(4) Distinctive case mark (stripe of color) recommended for each port.

(5) The shipping agents and Advisory Board to impress on growers the necessity for carrying out their obligations re space applications and allotment.

(6) If not using Port Huon, additional wharf accommodation needed at Hobart.

(7) As many steamers should be sent to Port Huon, Beauty Point and Bell Bay for fruit cargoes. Very important.

(8) That the receiving, assembling and handing over of the fruit to stevedores be placed under one effective control. The method for the operation of this control system is set out in the report.

Fruit Short Shipped.

Continuing, the report states that difficulties in providing full cargoes would always arise. No method or organisation, whether compulsory or voluntary, can assure full and accurate deliveries from the growers, because the matter is largely beyond the growers' control. Therefore, if the growers are to retain the right to nominate the port to which their fruit is to be shipped, and vessels are to be loaded with full cargoes, there must be some mis-shipments, and the shipping agents and the representative of the State Fruit Advisory Board, should have the power to do in each case what appears to them to be the best thing in the circumstances.

Cost of Marketing.

Avenues for Reductions.

The Commissioners state they have no doubt that the costs to the grower should be reduced through shipping all the fruit through one agency and shipping to one distributing agency which was prepared to finance the growers to the same extent as is now done by the brokers.

The problem of the single agency, however, was the form of it.

Many suggestions were made in evidence, but the question of finance was fundamental. Three of the suggestions made were:—(1) The Commonwealth Marketing Scheme provided for the Fresh Fruits Overseas Marketing Act, 1927. (2) State control as exercised in New Zealand. (3) Co-operation.

The report then deals at length with the proposed Export Control Board, directing particular attention to the fact that that Act did not specifically provide for non-interference with the f.o.b. trade. Further difficulties were mentioned, particularly Tasmanian representation and the differences of the mainland and Tasmanian viewpoints.

The report continues:—The conditions of the Tasmanian industry might imperatively call for some system or method of action which would not suit the growers on the mainland, or vice versa, and the Tasmanian representative might be out-voted on the Board. We were, of course, told that nothing like that would happen, but unfortunately things like that sometimes do happen, and the control would be as difficult to get out of as it is to establish it.

State Control.

As to State Control:—The New Zealand system as operated by the N.Z. Board of Control, could not be adopted unless the State Parliament guaranteed the growers at least 6/6 per case on a crop of between 2,000,000 and 3,000,000 cases, but State Control—assuming it to be competent for the Tasmanian Parliament to establish an effective control, might be operated with the aid of an English distributing agency or the English brokers, that is if they are prepared to find the money to finance the growers.

There is little doubt that this system would result in reduction of the shipping charge, but it is not likely that it would produce any reduction in the consolidated charge unless the brokerage representatives were eliminated.

The details of this proposed scheme and its advantages are set out in the report, including an estimate of the savings which would be thus effected.

With regard to stevedoring,

the main costs are wages—regulated by law. The profit on the capital invested is handsome, but as the stevedoring companies are paid by the shipping companies, and their charges are included in the freight, a reduction in the stevedoring charges could only be dealt with directly by the shipping companies.

Quality of Supreme Importance.

A matter of supreme importance is the necessity for limiting the overseas export to Apples and Pears of a high grade.

The quality of the fruit is the most important matter in the industry. It is no use establishing and perfecting methods of marketing unless fruit of a high quality is to be shipped.

The report continues:—

From the evidence we have heard, it is quite clear that the English market is no place to try to sell inferior fruit, and the shipment of it not only means a loss to the growers who ship, but adversely affects the market for those who ship high-grade fruit, and contributes very materially to the troubles we have discussed, i.e., wharf congestion, carry-over, etc.

Shipping Improvements Needed.

A matter second only to that of quality, was that of the carriage of the fruit. Notwithstanding recent appreciated investigations, much remained to be learned: the annual loss to growers from this cause was very great.

No greater service could be rendered to the Apple and Pear export industry by either the Commonwealth or the State Government, than a thorough investigation of the causes of deterioration in the fruit during its carriage and the ascertainment of means of avoiding it.

Suggested Co-operative Plan.

There are now two co-operative companies engaged in the fruit shipping business—the Port Huon Fruitgrowers' Co-operative Association Ltd., and the Tasmanian Orchardists and Producers' Association Ltd. (T.O.P.). A new co-operative company could be formed by amalgamating these companies, but the commission expresses no opinion as to the practicability of such an arrangement.

An alternative plan

would be to incorporate the State Fruit Advisory Board by statute, and empower it on behalf of the growers with all necessary authority. The Board would thus have power to contract for shipping space, arrange advances for growers, arrange for the sale overseas with one or more distributing agencies or brokers who would be prepared to finance the growers, etc.

Grading and Packing.

The importance of good grading and packing is emphasised. Central packing sheds with expert packers would be the best means of ensuring good grading and packing, but evidence showed this to be impracticable at present. Much could be done by the Advisory Board and the Agricultural Department by impressing on growers the necessity for good grading and packing, and in providing the necessary instruction.

The matter of inspection

was also of first importance, but in view of the fact that a great many of the growers did their own packing, the question was very difficult to deal with. Even the ten per cent. inspection was insufficient, as too much inferior Tasmanian fruit came on to the British markets. This was not the fault of the inspectors, but was due to the fact that inspection on the wharf could not be as extensive as the inspection should be.

The growers, however, could remove this cause of injury to the industry, and it was in their true interest to do so.

This matter should be dealt with by the Legislature or the appropriate Government Department.

If the recommendations submitted by the Chief Horticulturist (Mr. Thomas) were carried out, they should go far towards safeguarding the industry, **for it was the quality of the fruit which was going to either maintain it or ruin it.**

The report closes with a tribute to the capacity of the Secretary of the Commission—Mr. J. C. Watt.

Australian Apple and Pear Export Council.
Tasmania Joins.

At their last meeting the Tasmanian Fruit Advisory Board decided to affiliate with the Apple and Pear Export Council.

The subject of the British Committee of Agents was deferred.

TASMANIA.

Big Programme in Hand by Department of Agriculture.

THE EXPERIMENTAL and investigational work which is at present being carried out by the Department of Agriculture covers a fairly wide field, but a brief summary under the following headings will be sufficient to give a general idea of the main work undertaken:—

(1) Propagation of Malling Apple stock types for field trials.

(2) Test of various spray treatments on the development and control of Apple mildew, black spot and leaf spot.

(3) Soil insecticides and the control of Strawberry weevil (Otiorrhynchus sulcatus).

(4) The use of insecticidal dusts and the control of the spread of possible virus diseases in Hops and Tomatoes.

(5) Spring dressings and thinning of Apricots.

(6) Effects of excess potassic, phosphatic and nitrogenous fertilisers on the yield, growth and keeping qualities of Apples.

(7) Storage experiments in co-operation with the Council for Scientific and Industrial Research—to ascertain the effects of picking period and storage temperatures on the development of bitter pit and breakdown in Apples.

(8) Berry fruit variety tests.

(9) Tomato variety tests.

* * *

The Minister for Agriculture in Tasmania is Sir Walter Lee.

The following are some of the officers of the Department:—Messrs. F. E. Ward (Director of Agriculture); P. H. Thomas (Chief Horticulturist); H. A. Turner (Horticulturist); T. D. Raphael, B.A. (Horticulturist); A. S. Brennan (Packing Instructor).

FRUITGROWING is the largest primary industry in Tasmania. For the 1929-30 season the following figures show the acreage and production:—

	Acres.	Production.
Apples (bushels)	23,818	4,030,000
Pears (bushels)	1,993	274,000
Apricots (bushels)	1,328	126,000
Berry Fruits (lbs.)	2,667	9,517,000

Figures for Quinces, Plums, Peaches, etc., have not been fully compiled.

In the past season the following quantities of Tasmanian Apples and Pears were exported:—

Overseas:—Apples, 2,624,891 bushels; Pears, 197,985 bushels.

Interstate:—1,006,000 bushels (Apples and Pears).

* * * * *

For the 1931 season the crops are lighter, and it is anticipated that the overseas exports will total about 1,250,000 cases.

Messrs. T. Curphey Pty. Ltd., 344 Swan-street, Richmond, Victoria, are advertising "Bulldog" lime and "Bulldog" compo. For further details, see their advertisement in this issue.

The Orchard Fruit Supplies, Rockhampton, offer growers a prompt and reliable selling service, best prices, prompt advices and returns. Attention is directed to their advertisement in this issue.

Vine Manurial Experiments.

By H. L. Manuel (N.S.W. Government Viticulturist).

AMONGST the various manurial experiments conducted by the Department in different parts of the State on the different classes of soil, the following are results of one series of three years conducted through the courtesy of Mr. M. O'Shea on his Mt. Pleasant vineyards, Pokolbin, Hunter River district. This particular experiment is being conducted on a clay soil of rather poor nature on a steep slipe facing north, the soil being somewhat stony—the variety of vine is Aucerot.

When the experiment started in 1927, the vines were twelve years old. There are six plots, in which are included two check plots which have not received any application of manure. Each plot consists of five rows of twenty-five vines, six feet apart in rows, with the rows being a similar distance apart. Between plots three rows of vines are left without manure and treated as a separation area. Each plot is approximately one-tenth of an acre, and the plots comprise one of superphosphate in which super has been applied at the rate of 34 lb., or equivalent to 3 cwt. per acre; another plot is sulphate of potash, 17 lb., or equivalent to 1½ cwt. per acre; a plot with sulphate of ammonia, 17 lb., or equivalent to 1½ cwt. per acre; a complete manure plot receiving 22½ lb. of superphosphate, equalling 2 cwt. per acre, 11¼ lb. of sulphate of potash, equalling 1 cwt. per acre; 11¼ lb. of sulphate of ammonia, equalling 1 cwt. per acre; with two check plots, one at the top and one at the bottom of the plot. Superphosphate was applied on August 2, and the balance were applied on September 10, after growth had been started.

Very little rain fell in the winter and the early spring months, as one would see by the rainfall, as following particulars:—

1927.—June, 63 points; July, 10 points; August, 31 points; September, 51 points; October, 20 points; November, 721 points; December, 215 points.

1928.—January, 238 points; February, 641 points.

The weights of the grapes picked from each of the plots were:—

No manure	499 lb.
Complete manure	591 lb.
Superphosphate	704 lb.
Sulphate of potash	543 lb.
Sulphate of ammonia	492 lb.
No manure	589 lb.

In comparing the yields from the various plots in 1927, the figures would lead one to assume that the fertilisers were able to function with beneficial results from the effects of the November, December and January rains. Assuming this and working out the results on a commercial and acre basis at £14 per ton, the price paid that year for grapes on the Hunter areas. The comparative increased return from superphosphate would be as follows:—

Superphosphate—3 tons, 2 cwt., 3 qrs., 12 lb. per acre
2 „ 8 „ 2 „ 8 „ „ „

14 cwt., 1 qr. 4 lb. at £14
Equals £10 value of increase.

Superphosphate £5 10 0
Freight £1 0 0

£6 10 0 equals 19/6 for 3 cwt.
Benefit .. .. £9 0 6 per acre.

In the 1928 season, unfortunately, a severe thunderstorm interfered with the results, and not only did it interfere with the results of this season, but it had an effect on the fruit-producing wood which carried the 1929 crop, but the figures of both seasons I will give herewith without a comparative basis:—

1928-1929—

	1928.	1929.
No manure	104 lb.	169.5 lb.
Complete manure	90 „	200 „
Superphosphate	165 „	193 „
Sulphate of potash	56 „	186 „
Sulphate of ammonia	95 „	206 „

The rainfall in 1929 was as follows:—

	Points.		Points.
January	106	July	300
February	1,245	August	172
March	22	September	284
April	322	October	908
May	45	November	514
June	96	December	56
1930:—			
January	247	February	413

Looking over the results to date and considering that the 1928-1929 yields were affected by adverse weather conditions, it will be seen that the results are yet far from being definite, but they certainly appear that superphosphate is worthy of trial on soils of the kind on which the experiments are being conducted, as the results to date certainly show a benefit, and, as a fertiliser such as superphosphate is on the market at a fairly cheap rate, this manure is well worthy of a trial by growers of vineyards on similar soil.

VINEYARD NOTES.

Mr. A. V. Lyon, M.AG.Sc., officer in charge of the Merbein Research Station, after visiting Renmark, Mildura and the Murrumbidgee Irrigation areas, reports as follows:—

The Season.—Conditions for Grape production have not been altogether satisfactory.

Recurring rains has resulted in the appearance of black spot and downy mildew in many settlements.

In the Murrumbidgee Areas, there are heavy losses, due to frequently recurring rains.

In the Mildura and Renmark districts, the community losses are relatively small, though a few individuals have lost heavily, and the quality of the crop is adversely affected in some cases.

There should be no further damage this year if precautionary spraying for downy mildew is practised.

The Yields.—The potential yield, as disclosed early in the season by bunch counts, is low (approximately two-thirds) compared with the past season. There has been further reductions by disease. The quality of the dried fruit depends mainly on the drying season, the nature of which is of course undisclosed at date.

Consign your Fruit to—
J. JAEGER
Telegrams: Jaegagento, London.
FRUIT IMPORTER
18 Bedford Chambers, Covent Garden
London, W.C.2.,
and compare the results with those of the competition.
Try and See.
AGENTS REQUIRED.

The Drying of Sultanas.

Standard Methods for Uniform Dipping.

Seasonal Advice Tendered by the Australian Dried Fruits Association.

THE NECESSITY for elimination of variations in dipping practice has recently been stressed by all authorities in the dried fruits industry.

The A.D.F.A. Packers, at a conference held in Mildura on September 23, 1930, issued the following recommendations:—

(a) That in the light of past experience three standard dips are sufficient for the Australian industry, and that more are undesirable. The variations in dips devised by individuals or small communities have resulted in a multiplicity of types without any compensating advantages; also increased cost of production and increased difficulties in marketing.

(b) The three standards recommended by this Conference of Packers, in consultation with Messrs. Lyon and Arndt, are:—

1. Modified hot caustic dip. 2. Cold dip. 3. Mixed dip.

(c) That this Conference requests Mr. Lyon, after consultation with the Departments of Agriculture in the States concerned, to prepare an advisory pamphlet descriptive of the preparation and use of these standard dips.

The recommendations were subsequently confirmed at the Annual A.D.F.A. Conference on October 28, 1930, in Melbourne. The following notes have been prepared accordingly, after consultation with, and with the approval of, Messrs. G. Quinn and F. R. Arndt, Department of Agriculture, South Australia; F. de Castella and W. R. Jewell, Department of Agriculture, Victoria; and C. G. Savage, Department of Agriculture, New South Wales.

I. The Modified Temperature Caustic Dip.

1. Prepare a solution of caustic soda containing 1½ lbs. caustic soda to 50 gallons.
2. Heat to 192 deg. F., and test the strength by dipping a bucket of Sultanas. If effective, the bloom is entirely removed, and cracking of the berries is noticeable.
3. If too weak, add caustic soda in ¼ lb. additions to 50 gallons until effective dipping results. The dip is now ready for use.
4. All dipping should be done at 192 deg. F., without variation of more than three degrees either way.
5. The fruit should be sprayed on the rack with the cold dip solution within two days, for preservation of color and texture, and to hasten drying.

II. The Cold Dip.

1. Prepare in the dip tank the required volume of solution containing 1 lb. carbonate of potash to 2 gallons of water.
2. Add olive oil emulsion equivalent to one and a-half pints of oil to 50 gallons of solution.
3. Test by immersing the fruit for four minutes. If sufficient, the bloom will be wholly removed, and an oily coating substituted.
4. If not satisfactory, add oil emulsion progressively, at the rate of ¼ pint of oil per 50 gallons of water, until an effective test is obtained.
5. Add an excess of emulsion equivalent to ½ pint of olive oil to 50 gallons dip solution, before using.
6. Continue to use until slight traceries of bloom appear on the dipped fruit. Then add excess emulsion as in (5).
7. Additions of carbonate solution are made as a solution at original strength (1 lb. to 2 gallons of water), and entail further testing and additions to oil emulsion before using.
8. The fruit should be sprayed with the "cold dip solution" at the third day, and thereafter at intervals of three or four days. A special spraying should be applied during or immediately after rainfall.

III. The Mixed Dip.

1. Add 2½ lbs. potassium carbonate and 1½ pints of olive oil for every 50 gallons water in the dip tank (or proportionate quantities).
2. Add 1½ lbs. of caustic soda (per 50 gallons).
3. Heat to a temperature of 180 deg. F., and test by dipping Sultanas. Add additional caustic soda (¼ lb. at a time) until slight cracks appear on the berries. The dip is then ready for use at 177 deg. F. to 183 deg. F. The dip should not be heated to higher temperatures when not in use.
4. Make all necessary additions to the volume of the dip by adding a solution prepared as in (1) above. (A reserve prepared in a separate tank is found useful.)
5. The appearance of the fruit should at all times be taken as the guide to the concentration of the caustic soda. If overcracking, decrease concentration by adding solution as in (4) above. If undercracking, add caustic (¼ lb. additions to 50 gallons) until cracks are in evidence.

General Remarks.

1. The modified temperature caustic dip is recommended for general use.
2. The cold dip and the mixed dip give good results only when the condition of the fresh fruit is satisfactory, and drying conditions favorable.
3. The modified temperature caustic dip is of special advantage for the first filling of the racks, as it allows the second filling to take place before deterioration of the Grapes on the vine.
4. Spread thinly on the rack as soon as possible after draining.
5. Avoid over-filling dip tins. This damages fruit during cartage and stacking.
6. Spray with the cold dip solution (equivalent to 25 lbs. potassium carbonate, 1½ pints of olive oil to 50 gallons water) if drying rate is not satisfactory, or wet weather occurs. Overspraying, resulting in the formation of drops on the fruit, should be avoided.
7. Remove from the rack when thoroughly rack dried in the mornings, and expose to the sun on hessians as soon as possible. Removal before sufficiently dry is a common cause of deterioration in grade.
8. Exposure to the sun should be continued until all traces of green tinge have disappeared.
9. For cold dip a final wash is desirable in a solution of 5 lbs. potassium carbonate and 1½ pints of olive oil to 50 gallons of water. Redry until a satisfactory moisture content results. One day's exposure usually suffices.
10. Thorough drying is necessary for preservation of color and general condition.
11. Details in reference to cold dip and the modified temperature caustic dip are contained in a pamphlet issued by the Council for Scientific and Industrial Research—"Standard Methods of Drying Sultana Grapes in Australia."

APPLE AND PEAR EXPORT, 1931.

Conditions Appear to be Favorable for a Satisfactory Export Season.

The quantity of Apples available for export is not likely to exceed 50 per cent. of last year's figures. Further, the favorable rate of exchange, which at the time of writing offers the exceptional inducement to growers of 25 per cent. premium, should not be overlooked, although this high rate may not be maintained throughout the season, there is every reason to believe a substantial and well-deserved addition to growers' prices can be looked for in this connection. Every pound's worth of goods exported in these times of adversity is of considerable importance to Australia generally, and should be profitable to the grower, in particular.

For a number of years past Pears have been making good money overseas; and, as the South African Pear crop is light, Australian shippers are looking forward to satisfactory prices.

The following is a preliminary list of the steamers sailing from Melbourne:—

Sailing Date.	Name of Steamer	Port.
15th February	*Limerick	London
22nd February	Euripides	London & L'pool
28th February	Strassfurt	Hamburg
3rd March	*Orontes	London
4th March	Idomeneus	L'pool & Glasgow
5th March	Pt. Caroline	London
7th March	Moreton Bay	Hull
12th March	City of Glasgow	Hamburg
14th March	Isar	Bremen
17th March	*Kent	Hamburg
17th March	*Oronsay	London
18th March	Barrabool	London
21st March	Nestor	L'pool & Glasgow
24th March	*Cathay	London
28th March	Leuna	Hamburg
28th March	Balranald	London
31st March	*Orama	London
2nd April	Pt. Auckland	Rott'dam & H'burg
2nd April	*City of Winchester	London
2nd April	Ceramic	L'pool & London
4th April	Hobson's Bay	Hull
7th April	Asphalion	L'pool & Glasgow
7th April	Saale	Bremen
7th April	Mooltan	London
14th April	Orford	London
21st April	Chitral	London
25th April	Ballarat	London
28th April	Otranto	London

Vessels marked * are carrying Pears.

PERSONAL.

In early January, Mr. R. G. Hatton, M.A., Director of the East Malling Research Station, Kent, England, visited Renmark, Mildura and the Murrumbidgee areas, in company with Mr. A. V. Lyon, M.Ag.Sc., officer in charge of the Commonwealth Research Station, Merbein.

Customer: "To what do you owe your extraordinary success as a house-to-house salesman?"

Salesman: "To the first five words I utter when a woman opens the door—'Miss, is your mother in?'"

APPLE EXPORT PRIZES.

The "Orient" Competition.

Open to Growers Throughout the Commonwealth.

IN connection with the Royal Agricultural Society of Victoria, the Orient Steamship Company is continuing its appreciated prizes for export Apples. Details are as follows:—

Apples for Export (in case).—Four cases, two each of two distinct varieties suitable for export.

(a) One case of each variety (two cases in all) to be staged and judged at the Show. The other two cases to be forwarded to London and judged there. Points for both judgings, in Melbourne and London, to be added and the prizes awarded to the exhibitors obtaining the highest aggregate points.

(b) Apples to be packed in any bushel case recognised under the Commonwealth Fruit Export Regulations, but each exhibitor must use the same class of case for his exhibits. All cases to be branded in accordance with the Commonwealth Fruit Export Regulations.

(c) The Apples sent to London will, after judging, be sold on exhibitors' account and returns sent to individual exhibitors by the Society.

(d) All exhibits to be the property of and grown by the exhibitor.

Entries for this class (to be made by ordinary letter), close on Saturday, April 18. The two cases for exhibition at the Show to be consigned to the Manager, Royal Agricultural Society of Victoria, Show Grounds Siding, Flemington, and must be staged before 9 a.m. on Thursday, September 17. The two cases to be shipped to London, are to be consigned to the Manager, Royal Agricultural Society of Victoria, care of the Government Cool Stores, Victoria Dock, Melbourne, and must be at the Cool Stores on or before Saturday, April 18. They will be shipped by the R.M.S. "Otranto" on Tuesday, April 28, 1931.

First prize £10, second prize £5, third prize £3. The "Orient Jubilee" Cup donated by the Orient Company to commemorate the competition initiated to celebrate their Jubilee year—1928, will be given to the winner of the above class. Entry fee—members and non-members, 5/- each entry.

Scale of Points for Judging,

	Points
Suitability of variety for export purposes	15
Quality.—This can include condition, color, and suitability of size for the purpose	15
Freedom from Imperfections.—Absence from disease, bruises, blemishes, spots; stalk should be intact; natural bloom should be preserved as far as possible	20
Uniformity of grade	20
Form.—Should be typical of the variety where grown, and uniform	10
Packing.—To be of approved methods. Cases properly filled without bruising or slackness, general get-up of case considered, including lining paper, branding, etc.	20
Total	100

Note Carefully.—Entries (by letter), close on Saturday, April 18, and two cases of Apples (one of each variety) must reach the Government Cool Stores that day.

Seasonable Orchard Reminders.

Hints From New Zealand.

Spraying Operations.

PERIODS of moist, humid conditions such as are often experienced, will occasion much anxiety to orchardists as the fruit approaches maturity. Given suitable atmospheric conditions, the appearance of ripe-rot and black-spot may be so sudden, and the spread so rapid that it is wise to anticipate them and spray accordingly. The arsenate of lead sprays should be continued on the later-ripening varieties of Apples and Pears for codlin-moth, and powdery mildew will necessitate another precipitated sulphur spray.

Red mite and mealy bug will often become prevalent on Apples as the season progresses, and as neither of these pests is permissible in export or local market fruit, their control is imperative.

The presence of mite is readily detected by the washed-out appearance of the trees, and the mites will be found mostly on the underside of the leaves and on the fruit, where they deposit their tiny, roundish, red eggs in the calyx cavity.

Mealy bug is not so readily detected, as the eggs are laid in the fine web-like mass in the stem cavity. The value of effective early spraying is appreciated when these pests make their appearance, necessitating cessation of packing or greater vigilance in grading.

Special summer oils have been found effective for this purpose, as also has Black Leaf and kerosene emulsion, but the tendency of oil to promote russetting, and of Black Leaf to leave unsightly blotches, makes careful application necessary.

Ordinary spraying-oil may be used at not stronger than 1-100, thoroughly wetting the undersides of the leaves and the fruit. The addition of about 1 lb. of soap to each 25 gallons of water, by breaking up the oil globules, increases the spread and adhesiveness and reduces the tendency to spotting.

Fireblight.

In affected districts, fireblight should receive constant attention. Infected portions are liable to be missed during the dormant pruning, and the work is expedited if done while the foliage is present. Large trees, whose limbs do not receive the individual attention that is given to small trees, are liable to have diseased portions overlooked during the dormant period, and from these sources fresh infection can be disseminated in the spring, and the value of the previous season's work is nullified.

Pruning.

When the growth is well advanced, and while fruit is still on the trees is a good time to make a general inspection to note the results of previous season's pruning and decide on any variations or alterations in the methods adopted. The variation in fruiting-habit in different varieties is so great that an intimate knowledge of each variety's peculiarities is essential if maximum results are to be obtained.

Observation as to what type of wood the best fruit is produced on, and how the tree has responded to pruning, will help to correct past errors and prevent a great deal of anxiety on the part of those with whom pruning is not a business.

The desirability or otherwise of removing limbs from the centre of the tree can be decided best while the fruit is in position, and indicating by its color whether conditions are to its liking.

Crowded centres are not desirable, but what may appear crowded in the dormant season is often sufficiently open when the weight of fruit bears each limb outwards, and a little attention then may prevent sacrificing valuable fruiting-wood at the dormant pruning.

Pruning is performed to assist and direct nature, and to co-operate fully it is necessary to know just how her energies are directed.

Destruction of Diseased Fruit.

In the rush of picking and packing, the destructions of diseased fruit is sometimes delayed until a favorable opportunity presents itself. Where codlin-moth-infected fruit is present, the delay may be sufficient to allow the grub time to migrate and establish itself in winter quarters. The difficulty in controlling codlin moth in the vicinity of packing sheds is undoubtedly often due to this cause, and in the interests of next season's crop no effort should be spared in dealing with these potential sources of future trouble and expense.

Cultivation and Cover-cropping.

Where cover-crops are not being used, a heavy crop of seedling weeds may be expected. Cultivation should therefore be continued as long as circumstances will permit.

Sowing with rye-grass can be proceeded with during suitable weather conditions. Sowing during normal February weather is often unsatisfactory, and to get the longest possible growing-season, seed can be sown early in March.

Citrus Culture.

Cultivation will be the dominant work for the coming month in this section. The abundant rainfall has stimulated growth to a greater extent than usual, and it will be possible to replace more of the weak or exhausted wood with fresh young growth. Some attention should be devoted to thinning superfluous shoots before they harden, and to shortening any growths which appear likely to extend unduly.

Autumn manuring will be governed by the condition of the trees. The application of quick-acting nitrogenous manures to trees already developing a large amount of young growth will tend to keep the wood soft and increase the liability to frost injury.

Citrus derive more benefit from bulky nitrogenous manures than from the more easily applied chemical product; therefore consideration should be given to sowing a crop for ploughing in.

Cover Crops.

Late February and early March is the best time for sowing, and preference should be given to a leguminous crop. For this purpose lupins, peas, or clovers will provide a good bulk of vegetable matter, and, in addition, an appreciable amount of nitrogen.

Sowing should not be unduly delayed, for the maximum amount of growth is desired, and it will be necessary to plough the material in early in the season in order that it may decompose before the trees commence their spring growth.

Top Working.

Unfruitful trees or trees of poor type may be top-worked or budded over to more profitable kinds as soon as suitable bud-wood can be obtained. Shield budding into reasonably fresh bark on the main stems is generally satisfactory, and the limbs in which the buds are inserted may be shortened somewhat to check the sap-flow.

In selecting buds it is important that wood should be taken from trees of good habit that produce a desirable type of fruit. Strong-growing fleshy shoots and trees prone to developing excessive wood should be avoided, as these characteristics will be perpetuated in the new tree to the detriment of fruit-production. Short twigs on which fruit has been produced will provide the best bud-wood, which for satisfactory working should be round and free from thorns, with good plump buds. Triangular or flanged wood is not suitable, inasmuch as a sufficient width of bark cannot be obtained, and it is almost impossible to remove the surplus wood without damaging the eye.

In budding seedling stocks it is important that the bud be inserted at least 9 in. above the ground-level to ensure that there will ultimately be a sufficient length of stock to protect the more susceptible variety against infection by soil-inhabiting fungi such as collar-rot.—G. H. McIndoe, Orchard Instructor, Gisborne, in "N.Z. Journal of Agriculture."

AUSTRALIAN DRIED FRUITS.

The Commonwealth Dried Fruits Export Control Board advises that 673 tons of dried fruits were sold in Great Britain during the week ending January 22, for a total value of £24,212.

Sultanas, of which 352 tons were sold, averaged £41/18/4 per ton, and 293 tons Currants were sold at £29/11/8 per ton. Negotiations were proceeding for the sale of considerable parcels of Lexias, for which, in recent years there has been a limited demand.

The following table shows the comparison for this and last season to date:—

	Tons.
Shipments—1929	48,700
1930	44,690
Sales—1929	34,083
1930	25,114
Unsold (including shipments afloat)—	
1929	14,617
1930	19,576

Average prices realised to date, per ton—

	1929.	1930.
Sultanas	£41 9 0	£42 10 9
Currants	43 3 9	39 5 3

Demand for Sultanas continues fair, with a steady off-take, but enquiry for Currants is poor. Stores of Sultanas in London and other ports, and also now afloat, stand at 13,304 tons, compared with 13,498 tons at the same date last year, but the demand is better.

DRIED FRUITS CONFERENCE.

The third general interstate Conference of State Dried Fruit Boards began at the Commercial Travellers' Association, Melbourne, on January 27, Mr. J. M. Balfour, Chairman of the Victorian Dried Fruits Board, being elected Chairman of the Conference. Delegates were in attendance from Queensland. New South Wales, South Australia. West Australia and Victoria.

The Conference was opened by the Minister for Agriculture (Mr. Slater), who stated that the maintaining of the Imperial preferences, particularly the Canadian preference, had to a certain extent assured the immediate future of the industry. He considered there was much valuable work to be done among the Dominions with the object of arranging reciprocal trade agreements which would be the means of giving new life to industries such as that represented by the Conference. Mr. Slater expressed appreciation for the good work being done by members of the Boards, and hoped their efforts would be successful and the industry would enjoy greater stability. In the speech of the Chairman (Mr. J. M. Balfour), he stated that owing to the heavy reduction in export values for 1930 compared with the average price per ton in 1925, there would be a loss to the Australian grower of at least £900,000 in the U.K. market alone. The net realisations of a large portion of Australian dried fruits were well below the cost of production, and it was known that production costs could not be materially lowered without the quality of the fruit being affected and falling below market standards. Australian Sultanas were the best in the world, but Australia would not be able to maintain sales in the United Kingdom and Canada in competition with other countries had it not been for the aid of preferences. It was necessary for Australia to increase her exports, and the best interests of the Australian industry lay in the direction of endeavoring to expand the trade in dried fruits in all European and other countries open to it. Mr. Balfour suggested that Conference ask the proper authorities to consider the subject of co-operative action to increase the sales of dried fruits overseas, and thus prevent surplus production.

The consultative committee was re-elected, which consists of Messrs. Balfour (Vic.), G. A. W. Pope (S.A.), and G. J. Evatt (N.S.W.). With regard to the proclamation of other varieties of dried vine fruits, a sub-committee was appointed to prepare a memorandum for submission on the Department of Markets and for circulation among the State Boards. Messrs. R. P. Allen, E. Meeking, H. D. Howie and the Secretary were appointed on this committee.

The Conference was continued on January 28, and after conference with representatives of the A.D.F.A., a satisfactory arrangement was arrived at in regard to the marketing of Currants containing a certain proportion of seeds.

Reports from State Boards were adopted, dealing with the illicit trading and the installation of washing machines in packing sheds.

A resolution of a previous conference was passed, prohibiting the transport of dried fruits in bags.

After a survey of the estimated production for 1931 in relation to Commonwealth and export requirements, it was decided that State Boards be recommended to adopt the following opening home quotas:—For the season 1931—Currants 10 p.c., Sultanas 12½ p.c., Lexias 30 p.c.

Dried Fruits Control Board.—Messrs. Johnstone and Malloch were elected for Victoria, and Mr. McLeod for N.S.W.

RED CLIFFS.

Royal Commission Requested

At a meeting of the Red Cliffs branch of the Australian Dried Fruits Association held during January, after hearing the report of the Gunn Conference, a resolution was carried requesting that a Royal Commission be instituted to enquire into the whole position of the dried fruits industry.

A hearty vote of thanks was accorded to Mr. Farmer for his comprehensive report on the Gunn Conference.

The Australian Citrus Industry.

Its History and Development—Present and Future Production—Necessity for Export—Costs of Production Analysed.

Murray Valley Development Committee Reviews the Past Thirteen Years and Recommends Continued Scientific Research, Efficient Production and Organisation.

SINCE 1917 there has been a marked expansion of the citrus industry in Australia. Plantings have been extensively carried out in each State, particularly in Murray Valley irrigation areas, and in the New South Wales coastal districts. The average bearing acreage in the Commonwealth during the three years ended June 30, 1929, was 41,173 acres, which represents an increase of 40 per cent. in the bearing acreage for the three years 1916-17 to 1918-19.

The increase in bearing acreage has been accompanied by more than a commensurate increase in production, which advanced from 2,526,714 bushels to 4,107,797 bushels, or approximately 63 per cent., as compared with only a 25 per cent. increase in population over the same period.

Present Production.

The relative importance of the several producing States is indicated in the following table of production averaged over the three years ending 1928-29:—

Average Citrus Production by States, 1926-27, 1927-28, 1928-29.

	Quantity.		Value.	
State.	Bushels.	%	£	%
New South Wales	2,636,777	64	1,140,287	58
Victoria	449,103	11	230,290	12
Queensland	320,772	8	170,775	9
South Australia	416,777	10	225,799	11
Western Australia	284,294	7	190,951	10
Total	4,107,723	100	1,958,102	100

The year 1928-29, the last for which statistics are available, was the peak for citrus production in Australia, the figures being:—

Production, 1928-29, by Varieties.

State.	Oranges. Bushels.	Lemons. Bushels.	Other. Bushels.	Total. Bushels.
New South Wales	2,620,424	376,577	34,819	3,031,820
Victoria	378,101	162,860	*	540,961
Queensland	377,177	20,225	*	397,402
South Australia	362,527	43,089	4,250	409,866
Western Australia	243,054	58,108	3,823	304,985
Total	3,981,283	660,859	42,892	4,685,034

*Separate figures for other citrus are not available, Grapefruit being included with Oranges, and Limes with Lemons.

The bearing and non-bearing areas in each State on June 30, 1929, were as follow:—

	Bearing.		Non-bearing.		Total.	
State.	Acres.	%	Acres.	%	Acres.	%
New South Wales	26,366	62	6,889	57	33,255	61
Victoria	5,221	13	2,698	22	7,919	15
Queensland	2,918	7	1,003	8	3,921	7
South Australia	4,577	11	943	8	5,520	10
Western Australia	3,109	7	561	5	3,670	7
Total	42,191	100	12,094	100	54,285	100

Varieties Grown.

Of the total area in bearing in 1929, Oranges, including Mandarins, were grown on 36,882 acres, or 87 per cent. of the total. The balance comprised 4,970 acres of Lemons, and 339 acres of other citrus.

In their order of importance, the varieties of citrus grown in each State are as follow:—

New South Wales: Valencias, 30 per cent.; Mandarins, 21 per cent.; Navels, 22 per cent.; commons, 17 per cent.; Lemons, 9 per cent.; other, 1 per cent.

Victoria: Navels, 44 per cent.; Lemons, 25 per cent.; Valencias, 17 per cent.; commons, 8 per cent.; Mandarins, 5 per cent.; other, 1 per cent.

Queensland: Details are not available for this State. Valencias and common Oranges are, however, the principal varieties grown. Orange and Mandarin plantings represent 95 per cent. of the total area under cultivation.

South Australia: Navels, 61 per cent.; Valencias, Mandarins, and commons, 30 per cent.; Lemons and other citrus, 9 per cent.

Western Australia: Valencias, 35 per cent.; Navels, 29 per cent.; commons, 16 per cent.; Mandarins, 5 per cent.; Lemons and other citrus, 15 per cent.

Production is Increasing.

Citrus production in each of the five producing States is expected to expand during the next six years, by which time even the youngest of the existing young trees will have become bearing. After allowing for the mortality of bearing trees at the rate of 50 per cent. of the present non-bearing acreage in each State, except Queensland, where a net decline in the bearing acreage, rather than an increase, is anticipated, and having regard to the rising trend of the acreage yield in all States consequent upon more efficient production, and the increasing age of the trees, many of which have not yet reached the age of full bearing, it has been estimated that by 1936 the bearing acreage and production in each State will be as follows:—

Estimated Citrus Acreage and Production, 1936.

State.	Oranges. Acres.	Lemons. Acres.	Other Citrus. Acres.	Total. Acres.
New South Wales	26,794	2,679	337	29,810
Victoria	4,846	1,723	—	6,569
Queensland	1,960	135	—	2,095
South Australia	4,583	438	27	5,048
Western Australia	2,870	497	22	3,389
Total	41,053	5,472	386	46,911

Production.	Bush.	Per Acre.	Bush.	Per Acre.	Bush.	Per Acre.	Bush.
New South Wales	3,138,000	117	418,000	156	42,000	124	3,598,000
Victoria	534,000	110	172,000	100	—	—	706,000
Queensland	358,000	181	32,000	237	—	—	390,000
South Australia	545,520	119	49,056	112	3,375	125	597,951
Western Australia	255,430	89	60,634	122	3,564	162	319,628
Total	4,830,950	118	731,690	132	48,939	127	5,611,579

In comparison with the average production for the three years 1926-27, 1927-28, and 1928-29, the figures shown in respect of the year 1936 represent a total increase of 1,503,856 bushels, comprising 1,343,504 bushels of Oranges, 141,537 bushels of Lemons, and 18,815 bushels of other citrus, the details of which, according to States, are given hereunder:—

Extent to which 1936 estimate of citrus production exceeds the average production for the three years ended June 30, 1929.

State.	Oranges. Bushels.	Lemons. Bushels.	Other Citrus. Bushels.	Total. Bushels.
New South Wales	863,464	80,774	16,985	961,223
Victoria	220,425	36,472	—	256,897
Queensland	56,671	12,557	—	69,228
South Australia	172,744	8,633	203	181,174
Western Australia	30,200	3,101	2,033	35,334
Total	1,343,504	141,537	18,815	1,503,856

When compared with the figures for the year 1928-29, which was a year of high production, the 1936 estimate shows a probable increase of 849,667 bushels of Oranges, 70,831 bushels of Lemons, and 6,047 bushels of other citrus, or a total increase of 926,545 bushels.

Actual production in 1936 will, to a large extent, depend upon what transpires in the coastal districts of New South Wales, which contain such a large proportion of the total plantings in the State. The position of the coastal growers is referred to in the report, and the suggestion is made that a specific investigation be made concerning their position.

The Future of the Industry.

IN RECENT YEARS citrus production in almost every country has increased considerably, and there are already definite indications that this increase will become more marked in the next few years, especially in America, South African, and South American countries, with the result that all of these countries, against which Australia will have to compete in the world's markets, will have greatly increased surpluses as compared with current figures. A study of plantings and production in the principal citrus producing countries clearly points to the fact that caution must be exercised in the planting of additional areas, as there is ample evidence to show that the possibilities of a considerable over-production of the world's supply from existing plantings is not remote.

In Australia the consumption of citrus per head of population compares favorably with that of any other country, and, unless local markets can be extended, the surplus for export will become larger each year as additional areas come into bearing, and the acreage yields increase. Our per capita consumption of citrus increased by 23 per cent. during the past 13 years, and in the last two years for which the data are available, averaged 25.65lb. of Oranges and 4.3lb. of Lemons, as against a per capita consumption of 23lb. of Oranges in 1926-27, and 3.6lb. of Lemons (average for five years, 1923-1927) in America. Later figures in regard to America are not available, but the comparison suggests that citrus consumption in Australia has now reached the stage beyond which it will be difficult to advance.

Orange and Lemon production is at present pressing hard upon the limits of the home demand, and although the capacity of the local markets may be expanded up to a point by wider distribution, by well directed publicity campaigns, by the efforts of interested public bodies in advocating the more general use of citrus fruits, and by the discovery of a means whereby the fruit can be made available out of season, it is evident that export markets will have to be more extensively developed if local prices are to be maintained at a level that will render production profitable to growers.

Necessity for Export.

It has been shown that in 1936, after allowing for the increase in population over the intervening years, the Australian market will absorb 3,899,000 bushels of Oranges, and 684,000 bushels of Lemons, assuming a per capita consumption equal to the average of the two years 1927-28 and 1928-29.

If these figures are deducted from the 1936 estimate of production, it will be seen that the industry will be faced with the necessity of exporting 932,000 bushels of Oranges and 48,000 bushels of Lemons.

In a year of high production the surplus would be considerably larger.

With this prospect ahead, any furthen extension of plantings of these varieties should be suspended until it can be conclusively shown that the industry can command, at profitable prices, such export markets as will absorb the surplus production from existing plantings.

(To be continued.)

THE GRAPE-FRUIT.

Better Varieties Will Mean Increased Consumption.

(R. J. Benton, Special Fruit Instructor, N.S.W.)

THE GRAPEFRUIT (Citrus paradisi), so-called from the fact that it is borne in large clusters, is also known as the Pomelo, a name mistakenly applied to the Shaddock. The latter, however, belongs to another species, namely, Citrus maxima or grandis.

This variety of citrus fruit is becoming increasingly popular all over the world as a breakfast table appetiser, and in America its consumption has been largely increased by means of propaganda. Locally, too, sales have latterly been increased, but not in a great degree, and so far as the variety at present grown (Marsh) is concerned, it would seem that it is not likely to advance much further. Consumers in New South Wales apparently eat Grapefruit because they believe it to be beneficial to the digestive system rather than because they like it, and unless a variety which combines greater palatability with wholesomeness can be offered to our public it appears that the consumption rate must necessarily be restricted.

Only a small area of Pomelos (approximately 200 acres) is cultivated in New South Wales, and practically all of the fruit is of the Marsh variety. Much of the product, however, is difficult to dispose of, particularly during midwinter and early spring, at which season (June to September) the bulk of the fruit matures. An occasional grower is very successful with Marsh. The fruit is not of higher quality, but the treatment given to it during harvesting and before marketing warrants and results in a much above average price.

Such growers firstly clip all fruit carefully, then grade it for quality, the coarse, rough-skinned being separated from the smoother, pale-colored specimens. All such graded fruit may then be stored in lug boxes stacked in a ventilated shed, away from the wind or draught. The fruit will often thus keep in good condition for two months, sometimes longer, according mainly to the season. It is washed with soapy water and well dried prior to marketing, and occasionally is given the merest wiping with a paraffin or vaseline rag to add to its sheen.

Harvesting during periods of dry weather is advisable, and where morning dews are heavy no doubt picking late in the day would help to minimise mould development.

Cultivation of the Pomelo is very similar to that of the Orange tree. Usually budded on common Lemon stock, the tree on planting out is of vigorous growth. It is about as hardy as the Orange, and less liable to frost injury than the Lemon. Annual ploughing and cultivation, together with fertilising, appear to be as necessary for Grapefruit as for Orange culture. The bright yellow color of the rind renders it very important to keep insect pests strictly under control. Particularly should fruit-fly infection be minimised as much as possible, their "stings" being readily recognisable.

With respect to the relative importance of Grapefruit culture in other citrus-growing countries, it is interesting to note that of 350,000 boxes of all citrus fruit produced in Jamaica, 150,000 boxes (42 per cent.) are of Grapefruit.

In Florida of the Oranges and Pomelos produced the latter comprise about 30 per cent.

In California of the Oranges and Pomelos produced the latter comprise about 3 per cent.

In New South Wales of the Oranges and Pomelos produced the latter comprise less than 1 per cent.

It is in the United States that the Pomelo is appreciated to the greatest extent. In that market fruit from Florida and the West Indies is regarded as being superior to anything produced and realises the highest prices, 1½ dollars or more per case frequently being received over that from other sources. Varieties in Florida and the West Indies are not limited to Marsh. In California, however, as in New South Wales, the fact that the Marsh variety is seedless has apparently been allowed to outweigh more desirable characteristics, such as a thinner rind and less bitterness, or a better combination of sugars and acids. Hume states that the favorite varieties in Cuba are Duncan, Marsh and Walters. Many of the favorite Florida varieties were originally seedlings, the flavor of which was regarded as being better than that of the Marsh, which is of Florida origin. Marsh has frequently been imported to this State, permitting an opportunity of comparing its quality as grown in Californian localities and in New South Wales. Much of the Californian fruit is not of better quality than that produced here, but it was noted that Imperial Valley (California) produced fruit of superior character. Arizona-produced Marsh is also a finer quality fruit, indicating that soil and climate play their part in this respect. There is no doubt, however, that our strain is identical with that imported.

It is interesting to note Hume's remarks in regard to a comparison of Florida and Californian Grapefruit quality. He states: "At present it seems probable that Florida will retain control of the Pomelo market for some time, probably indefinitely. . . . The Californian Grapefruit has not, up to this time, met with the same favor in the markets, though it is possible that varieties may yet be brought forward better suited to the soil and climate of that State." Professor E. J. Coit (California) states: "Whilst seedlessness is a very desirable character in a fruit, it should not be allowed to outweigh such characters as flavor, juiceness, and quality. California is in need of a variety of Pomelo better suited to the conditions than any now available." These expressions appear to be very applicable to Grapefruit production in New South Wales.

The main objection to Marsh in this State is the tendency to an unduly thick rind and a too pronounced bitterness of flavor. The sugar, acid, and bitterness are not well combined. With young vigorous trees such defects may be expected, but many trees over ten years old do not reveal the refining influence which might be expected in this direction. Marsh is usually called Marsh's Seedless, but the reference to seedlessness is somewhat misleading, for usually from two to six seeds are present. It is commonly thought in this State that unless a Pomelo is seedless or almost so, it cannot be classified as a Grapefruit. As a matter of fact, there are many varieties of Grapefruit, all of which produce seeds, Marsh alone being almost seedless.

In view of the fact that though Marsh is a popular variety in Florida and Cuba, a high quality is produced only in Arizona and Imperial Valley in California, it appears advisable to extend very gradually with the variety in this State pending the results of tests with other sorts. Some of the latter which have been successfully introduced by the Department are Duncan, Thompson, Imperial, and a variety from Hong Kong.

With the exception of that grown in Imperial Valley (and unusual climatic conditions prevail there) practically the whole of the high quality Grapefruit is produced between north latitude 15 to 30, and in proximity to the ocean's influence. China and the East Indies, as well as Florida and the West Indies, are in such situations, which facts are probably of material significance.—"Agricultural Gazette of N.S.W."

THE HARCOURT (VIC.) DISTRICT.

(Continued from p. 47, January "Fruit World.")

The prospects in the well-kept orchard of Mr. R. B. Leversha are good. Apples and Pears are grown, the principal varieties being:—Apples: Rome, Dunn's, Delicious, Jons., Crowns, Schroeders, Pomme de Neige, King David. Pears: Nelis, B. Bosc, Capiaumont, Williams, Josephines.

In Mr. C. Smith's 24-acre orchard the prospects are:—Apples, light; Pears, good; Plums, heavy. The varieties grown include:—Apples: Dunn's, Jons., Spitzenberg, Rymer, Rome, Yapeens, Crowns. Pears: Nelis, Josephines, Bosc, Eyewood, W. Coles, Williams, Bergamots. Plums: Orleans Washington, G. Duke, Silver Prune.

Mr. H. W. L. Smith has a nice 18-acre orchard. Apple varieties include Dunn's, Romes, Jonathans, Yates. Pears: Nelis, Josephine and Packhams. Prospects are for a light crop of Apples and a medium crop of Pears.

The varieties of Apples grown on the orchard of Mr. W. Ely are Dunn's (light), Schroeders, Delicious, Stewarts, Jons. and Pomme de Neige (good), Romes and Crowns (light). Pears are Packhams (good), Josephines and Williams (light). This is a 25-acre orchard.

Apples, Pears and Plums are grown on the 15-acre orchard of Mr. J. B. Warren. The prospects are:—Apples, light; Pears, medium. The principal varieties of Apples grown are Jons., Dunn's, Sturmers, Cleos., Romes, Schroeders, Stone Pippins, Reinettes. Pears: Josephines, Nelis, B. Bosc, Packham, Williams. Mr. Warren has two acres of Plums, including Orleans, Diamond, G. Duke. In the Apples, Dunn's set fairly well, though patchy in parts.

Mr. W. Roberts has a nice 10-acre orchard of Apples, Pears, and Plums. Prospects are:—Apples, light; Plums and Pears good. The following Apples are grown:—Dunn's, Cleos., Romes, Stone Pippin and Jons. Pears: Nelis and Josephine. Plums: Orleans, Diamond, G. Duke.

On Mr. W. E. Williams' orchard, comprising 30 acres, Apples, Pears and Cherries are grown. Apples include Dunn's, Schroeder, Jonathans, Crown, Reinettes, Cleos. Pears: Nelis, Josephines, Williams Capiaumonts. Cherries: Purple Guigne, Burgsdorff, Eagle Seedling, and Margaret. Mr. Williams finds that some Cherries die out and others, though old, bear exceedingly well. Prospects are as follows:—Apples, light; Pears, medium; Cherries, good.

Mr. W. L. Williams has a good crop of Cherries and Plums. Apples, however, are light, and Pears medium. His orchard comprises 33 acres. The varieties of Apples are:—Dunn's, Romes, Rymers, Schroeders, Demos., Crowns, Spitzenberg, Winter Strawberry, Yapeen. Pears: Williams, Nelis, Josephines, Packhams, W. Cole.

On the 24-acre orchard of Mr. C. A. Warren the prospects throughout are light. Mr. Warren's orchard is well kept, and the varieties grown include:—Apples: Stone Pippins, Cleos., Crowns, Rymers, Dunn's, and Schroeders. Pears include:—Josephine, Nelis, Williams, Eyewoods and Napoleons.

Mr. H. T. Douglas has a 22-acre orchard containing many old varieties, which are gradually being replaced. Mr. Douglas has also budded a number of new varieties of old stock. The main varieties of fruit grown are:—Apples: Dunn's, Rymers, Crowns, Scarlets, Romes, Delicious and Jonathans. Pears: Nelis and Gansels. Mr. Douglas also has three acres of Apricots, with prospects of a medium crop. The prospects for Apples and Pears are very light.

On the 25-acre orchard of Messrs. McLean Bros., Apples and Pears are grown, the principal varieties being:—Apples: Dunn's, Romes, Stone Pippins, Schroeders, Cleos., Sturmers. Pears: Nelis (good crop), Josephine (good), Williams (light). A very light crop of Apples is expected. Messrs. McLean Bros. have several acres of young Pears coming on.

Mr. W. Mitchell has a productive 20-acre orchard. The prospects are:—Apples, medium; Pears, good. Varieties of Apples grown are:—Dunn's, Romes, Jons., Delicious, Statesman, Granny Smith. Pears (three acres), Williams and Josephine.

On Messrs. J. Smith & Sons' 40-acre property Apples, Pears and Cherries are grown. Apples include Munros, Romes, Yapeen, Jonathans, Delicious. Pears (six acres): Williams, Nelis, Josephine and Eyewood. A light to medium crop of Apples is expected; Pears medium, and Cherries good.

Mr. Reg. Eagle has a nice orchard, comprising some 22 acres. Prospects are:—Apples, very light; the rest light. Varieties:—Apples: Dunn's, Cleos., Romes, Jons. Pears: Williams, Josephine, Nelis, Bosc, W. Cole. Apricots and Plums are also grown. Plums include:—Orleans, Green Gage, Magnum Bonum. Last year Mr. Eagle sprayed with white oil for codlin, and estimates that the crop was doubled.

Mr. E. L. Twomey's orchard is well-kept, and comprises some 14 acres. Apples grown are:—Dunn's, Schroeder, Crowns, Romes, Rymers. Pears: Josephine and Nelis. Prospects are:—Apples, expects 75 per cent. crop Pears (two acres), good. Mr. Twomey believes that early ploughing helps to lessen the danger of pest infection.

In Mr. S. Johansen's 20-acre orchard the varieties of Apples grown are York and Jonathans; and Pears, Josephines and Nelis. Prospects: Apples, medium; Pears, good.

Mr. T. G. Ellis has a 14-acre orchard, and grows Apples and Pears. Varieties grown are as follows:—Jonathans (150 trees), Dunn's (200), Romes (200), Schroeders (100), Crowns (100), Delicious (100). Pears: Nelis (200), Josephine (100), Packhams (50). Prospects are for light crops.

On the orchard of Mr. F. Partridge (comprising 16 acres), prospects are for a very light crop. The varieties grown are:—Apples: Jonathans, Delicious, Romes, Dunn's, Democrats, Crowns, Granny Smith. Pears: Nelis, Josephines, Packhams.

Mr. E. M. Cox's orchard comprises 3½ acres of Apples, 1½ acres Pears, 1½ acres Cherries. Varieties grown are:—Apples: Dunn's, Jonathans, Romes. Pears: Williams, Josephines and Nelis. Cherries usually do very well. Prospects are for a very light crop throughout the orchard.

Mr. E. W. Cox has about 14 acres under fruit culture (1,200 trees of Apples, 325 Pears, ½ acre of Cherries). Prospects, all light. Varieties:—Apples: 350 each Romes, Jons, Delicious; Dunn's (150), Schroeders (75). Pears: Nelis (200), Josephines (100).

On the 11-acre orchard of Mr. E. T. Warren, Apples, Pears and Plums are grown. Varieties include:—Apples: Dunn's, Stewarts, Statesman, Rome. Pears: Nelis, Packhams, Josephines. Plums (½ acre): G. Duke. Prospects are for a light crop.

Mr. Frank Eagle has a five-acre garden. Varieties grown are:—Apples: Jons., Dunn's, Schroeders, Romes. Prospects, all light.

Mr. R. Hankinson's 14-acre orchard is well kept, and contains:—Apples: Delicious, Jonathans, Dunn's, Schroeders, Cleos., Rome. Pears: Nelis and Josephines (together 450 trees), Packhams (50). A light crop is anticipated.

The 16-acre orchard of Mr. T. Torrens comprises 13 acres of Apples, 2 acres Pears, and 1 acre of Plums. Varieties are as follows:—Dunn's, Cleos., Romes, Jonathans, Rymers, Delicious, Londons Schroeders. Pears: Nelis, Josephines, Coles, Williams. Prospects are:—Rymers and Schroeders (good), remainder light.

Mr. H. H. Eagle grows Apples, Pears and Plums. He has 25 acres in bearing and 20 acres of young trees. Varieties grown are:—Apples: Dunn's, Romes, Delicious, Granny Smith, Jonathans, Rymers, Democrats, Crowns. Pears: Nelis Josephine, Williams, Coles. Plums: Magnum Bonum. Prospects:—Dunn's (45 per cent.), Jons. (good), Rymer (good), remainder light: expects half crop. Pears (7 acres) good. Plums (1 acre) good.

Mr. L. H. Eagle has 25 acres in bearing and five acres young trees. Varieties grown are:—Dunn's, Romes, Jonathans, Rymers, Stone Pippin, Cleos., Spitzenberg. Pears: Nelis, Jos., Williams, Gansels.

In Mr. S. A. Eagle's orchard the varieties grown are:—Dunn's Jonathans, Romes, Stone Pippins, Delicious. Twelve acres are in bearing and nine acres young trees. Prospects, very light.

(To be continued.)

FRUIT EXPORT.

Carefulness Necessary in Wiring.

Precautions Against Black Spot.

In wiring cases for export, growers should put the wire around each end of the case. The Department of Agriculture states that some growers and packers have adopted the bad practice of placing the wire around the centre of the case. The centre wire has a tendency to bruise the fruit, and inspectors have been instructed to reject cases wired in the centre.

Black Spot.

A number of growers have recently made enquiries about the amount of black spot allowed on fruit this year.

It should be borne in mind, states the Superintendent of Horticulture, that no matter how prevalent black spot may be in any particular year, the regulations governing the area of the disease or blemishes on any one fruit is not relaxed in any way; therefore it is useless for growers to ask for any relaxation for this or any part of the regulations.

In the "Special" grade, no black spot is allowed, and in the "Standard," which, by the way, is looked upon as the commercial pack, black spot markings are allowed on 10 per cent. of the fruit, conditionally that the area of black spot does not exceed ¼ in. in diameter, or if there are a number of small markings the disease does not exceed ¼ in. in the aggregate. The 10 per cent. of blemishes is allowed for human error as it is not always possible to see every blemish. Our advice is to put out every Apple or Pear showing blemish, even then too many will be packed. In the "Plain" grade, the fruit is allowed black spot markings and blemishes to the extent of ½ in. in diameter, or the equal to it in the aggregate. No black spot is allowed on Apples less than 2¼ in.

For the good name of Victoria and Australia as a whole, growers would be wise to export nothing below "Standard" grade.

Pear Export.

This year, Pear growers in the south are troubled with what may be termed "pin-pricks" of black spot markings on their W.B.C. Pears. If such Pears are affected to any extent they will not be allowed export.

EXPORT TO GERMANY.

What is the Position Regarding Australian Fruit?

Messrs. E. R. Cottier Pty. Ltd., 88 Collins-street, Hobart, Tasmania, are in receipt of a letter from Ph. Astheimer & Sohn, Hamburg, dated December 12, which reads as follows:—

"At the present time the German agrarians who are the assistants of the German National Socialists' Party, are trying everything in their power to induce the Government to restrict or possibly prohibit the importation into Germany of foreign fruit that competes with locally produced fruit. With the exception of a few early varieties of berry fruits the Australian Apples are not on the market at the same time as the German fruit. There is therefore, no good reason to anticipate any interference with the importation of Australian Apples and Pears, nor is there any necessity at the present juncture to be alarmed that Germany will impose a higher duty on Australian fruit.

"On the other hand, however, it must be remembered that Australia has no commercial treaty with Germany, and if extra duties are to be imposed on foreign fruits, no doubt this is a matter that will be taken into consideration, and those countries which have a commercial treaty will probably receive some preference."

VICTORIAN FRUIT MARKETING ASSOCIATION.

At the monthly meeting of the Executive of the Victorian Fruit Marketing Association held on January 16, there were present:—Messrs. H. G. Colombie (President); Griffieth, Carne, Brown, Bailey, Eagle, Mellor, Barker, Harrison, Parnham and the Secretary. Apologies were received from Messrs. Ford, Mills and Jost.

Freight on Export Fruit.—Appreciation was expressed for the services of the Vice-President, Mr. J. B. Mills, whose negotiations with the shipping companies had resulted in the new freight rates on fruit exported being kept at a minimum.

It was decided to send delegates to the conference called by the Cool Stores' Association.

Apple and Pear Export Council.—A resolution was adopted officially joining the Australian Apple and Pear Export Council, and it was decided to write to the other States, inviting their affiliation before March 31.

Quarantine Charges on Timber.—The Secretary reported having written to the Federal Director of Quarantine, Dr. Cumpston, protesting against the newly-imposed quarantine charge of 1d. per 10 bundles of box shooks, representing 1d. for every 50 boxes. which meant an additional impost of £500 on the industry. A reply had been received agreeing to withdraw the charge. An application for a refund of £100 already paid had been lodged.

The Secretary's action was endorsed and appreciation was expressed for the success achieved.

Research Committee.—At the instance of Mr. Bailey it was decided that the grower members of the V.F.M.A. form a Committee, with power to add, to formulate a programme to assist Research into fruitgrowers' cultural problems, the first to receive consideration being that of biennial cropping.

CANNED FRUIT IN ENGLAND.

Australian Resident After Re-visiting England, Believes Our Trade Could be Largely Increased.

Salesmen with "Push" Are Needed.

Australian Sultanas Are Greatly Appreciated.

Mr. J. A. Napier, of Lancaster, Goulburn Valley, Victoria, recently returned from England, after having spent several months in the Northern counties. Mr. Napier is an Englishman by birth. Before coming to Australia he was for many years in the grocery business in Manchester.

Being closely in touch with the fruitgrowing and canning industries in the Goulburn Valley, Mr. Napier paid special attention on his recent visit to England to the possibilities of increasing the sale of Australian canned fruit in the United Kingdom.

In a recent interview, Mr. Napier stated that canned fruits, particularly Peaches and Pears, were becoming more popular with the people, and these fruits were to be found on the tables of most of the people every day. It was noticed that these canned fruits were served freely in cafes in fruit salads and with ices.

Mr. Napier states, however, that the Australian canned goods seemed to be sadly out of it, and on his enquiring for a tin of Australian Peaches in many of the shops was told they had none. Only on one occasion was he able to buy a tin of Australian Pears, and this was brought from the back of the shop, while the brands of our competitors were boldly displayed on the shelves and in the window.

On enquiring why they did not stock the Goulburn Valley canned fruits, the reply in one or two instances was to be reminded of our lack of "push." In other cases the brand had not been heard of.

On his travels, Mr. Napier kept a lookout for our canned fruits in all the shop windows, and states that on only two or three occasions did he find what he was looking for. "I know this sounds like an exaggeration," said Mr. Napier, "but I can assure you it is not. Our brands are simply unknown in those parts."

Many grocers said they would sooner sell British fruits, but stated that they did not seem to be on offer, whereas U.S.A., California, and other brands are constantly kept before them.

"I could not help but feel" (continued Mr. Napier), "that if we only put half the push behind our goods that the other fellow does, we would not be in the position we are to-day. We in the Goulburn Valley can boast about the fine fruit we grow and the good pack we put up, but I think it's high time we got over there and told them about it."

Mr. Napier states that we should get in touch with the man who is handling the fruit over the counter. While our distributor handles the bulk and distributes it to the wholesale houses, it is suggested that capable men should be sent overseas to work the shops and stores and endeavour to create a demand for our canned fruits. The business is there, but we must work for it, and until we do this we are always going to be in difficulties.

The competition overseas is keen, and we have many disadvantages, but ours is a British product, and if we can get it placed prominently before the British housewife, backed up by a guaranteed quality, we will surely get our place on the Home markets.

Continuing, Mr. Napier said that the most popular of the Australian products overseas is Sultanas. Nothing but praise was heard on all sides regarding Australian Sultanas: they are freely displayed in the shop windows. "I am convinced there is nothing over there to touch them in quality," said Mr. Napier. "The pity is that production costs are so high and the return to the grower so low, but I think if the quality is kept up to the present standard as seen over there, there should be a possibility of better prices."

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United Kingdom
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AUSTRALIAN CANNED FRUIT.

Selling the Pack in England.

Railways Commissioner Criticises Selling Arrangement.

"One Cannery Prevented a Big Sale."

DURING the recent visit of the Chairman of the Victorian Railways Commissioners (Mr. H. W. Clapp), Several requests made on behalf of the Shepparton Irrigators' Association were not acceded to. These had reference to collecting Association levies, reduction in prices for iced trucks, and an automatic signal at railway crossings.

Mr. Clapp pointed out the serious losses on the railways, which had to be made good by the taxpayer. Further, that the Railways Department had done, and was still doing, many things of great service to the fruitgrower. At the present time, continued Mr. Clapp, it was not a question of the railways not being able to carry fruit to the canneries, but of canneries not opening to receive fruit because of their being no market for it. It was a fact that certain people had stood out and would not sell their pack of canned fruit. There was an opportunity to sell the pack of canned fruit. All agreed but one concern, and that stopped the sale. Practically the whole of the pack in England could have been sold.

Mr. McDonald: "But it would have involved a loss of £30,000. I believed at the time in selling."

Mr. Clapp: I know the whole position, and what I am saying is correct. Had the sale been made there would have been the backing to enable this year's processing to have proceeded.

FRUIT FOR GLASGOW.

Mr. W. E. McCaig (of McCaig & Webb, Fruit Merchants, Glasgow), has been elected a new representative on the Clyde Navigation Trust. The representation of the fruit trade on the Clyde Trust is generally appreciated. Messrs. McCaig & Webb are represented in Victoria by Messrs. McQueen & Son, Melbourne.

AUSTRALIAN APPLES FOR CANADA.

The possibility of finding a market for Australian Apples in Canada is discussed in a letter received by Mr. J. A. Parkes, Manager Victorian Central Citrus Association, from the Vice-President of the Montreal Fruit Exchange Ltd., Canada. After discussing the citrus business, the letter reads:—"Furthermore, we see no reason why you should not forward Apple exports to our country as well, as we figure our own homegrown and the American fruit would be practically extinct by the time your shipments of Apples would arrive, namely in our summer months, somewhere on or about May or June. Usually at this time of the year there is a splendid market prevailing before the new crop of American fruit gets to our market."

* * * * * *

It is of interest to note that last season New Zealand sent 10,633 cases of Apples to Canada.

Fruit Markets in Japan

University of California, Bulletin 493.

No. 2 of Series. Continued from Page 497, December "Fruit World."

THE DIRECT FRUIT EXPORTS from California to Japan are not extensive. In 1929 canned fruit 604,229 lbs., valued at £14,500, dried fruit 3,409,995 lbs., £54,160 (Raisins 2,990,935 lbs., £40,200), and 23,000 boxes of fresh fruit, principally Lemons were shipped.

Japan proper comprises only 142,000 square miles, about one-twentieth the area of Australia, and has a population of 60 million—nearly ten times that of Australia.

The population of Japan is 61 persons per square mile, or 376 persons per square mile of cultivated area. Half the families of Japan are farmers, the average holding being less than 3 acres per family. Half the area under cultivation is given to rice, there being also 250,000 acres in various fruits.

A small number of the population of Japan is wealthy and can afford to buy anything that pleases them. The middle class is relatively small in number. The great bulk of the people are poor. The standard of living is higher than that of China or India, but decidedly lower than anything in the Occident.

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The bulk of the population live in the smaller towns, villages and farms in the country. Most of them still live in the same houses, wear the same sort of clothing, and eat the same kinds of food as did their forefathers a century ago.

These islands are one of the rainiest regions in the world. It rains or snows on the average 150 days a year. The heat and high humidity necessitate the protection of dried fruits in tins rather than cartons. Bulk dried fruits exposed to the air rapidly spoil.

The regular diet of the Japanese does not include fruit. Native fresh fruits, including a hard, round Pear, are eaten in season, and keep well into the cold weather. Native Mandarin Oranges are popular during the winter. All these, however, figure in the Japanese mind as a refreshment rather than as a food.

Fruit, native or imported, is a decided luxury. Cooked fruits were originally unknown in Japan.

The popularity of canned fruit is based on the fact that they need no preparation. Raisins were introduced as a confection to be eaten out of hand in place of candy rather than as an item in a regular meal. Appearance in imported food is pre-eminent: fine distinctions of taste are secondary.

The Japanese are shrewd and careful buyers; they are likely to discard all unknown packages as probably of inferior quality.

Five conferences were held in Japan; the attendance ranged from six to forty persons. Samples of American canned and dried fruits were opened and sampled. Certain of the fruits displayed were totally unfamiliar. A number of the fruits did not appeal to their taste at all.

The Japanese seem to prefer a firm fruit; canned Pears were too soft for their liking. Dried Peaches were disliked because of the fuzz on the skin. Canned ripe Olives had no food qualities whatsoever.

The importation into Japan of Apples, Apricots, Pears, Peaches, Plums, Quinces and Walnuts is prohibited from U.S.A., Canada, South Africa, Australia, New Zealand and Brazil under plant quarantine regulation.

These fruits must therefore be eliminated for the present from any practical discussion of the markets for imported fresh fruit in Japan.

Importation of fresh fruit from America has been confined for recent years to Lemons, Oranges and Grapes. As these pay a duty of 100 per cent., their price is necessarily high.

Fruitgrowing is a well-developed industry in Japan, their production being:—

Apples, 78,858 tons; Navel Oranges, 15,655 tons; Grapes, 45,402 tons; Peaches, 56,856 tons; Loquats, 14,994 tons; Pears, 159,486 tons; Mandarins, 239,396 tons; Persimmons, 240,219 tons; Bitter Oranges, 53,821 tons.

In old Japan the Persimmon, the hard native Pear, the loose-skinned Orange, and the Peach were the principal fruits. European varieties of Apples, Peaches, Pears, and Grapes are now found in many parts of Japan.

Persimmons are grown almost everywhere, though seldom in orchards. In August, 1929, native Pears were selling at about 7 cents each, Peaches 2 to 10 cents each, Figs 4 cents each, Plums at 9 cents a pound.

Fresh fruits are given as presents, particularly to the sick. It is customary to give fruit rather than flowers to those to whom one desires to express sympathy. Baskets of attractive fresh fruits, which sell for 1.50 to 3 dollars, are prominently displayed in stores of the large cities.

In 1929 there were 17,167 boxes of Californian Lemons exported to Japan. Packed 300 to the box, they sell retail for 6 to 10 cents each. The purchase of Lemons both by Japanese and foreigners in Japan is more than a luxury, it is a delicacy. The amount of Lemons imported is therefore likely to increase but slowly as long as present prices obtain.

Oranges rank second in value, 4,798 boxes being shipped. Oranges from America are unrivalled in the Japanese market.

Oranges packed 125 to the box sell for about 20 cents each retail. At times the price rises to 30 cents. At such prices even the foreign resident in Japan finds them almost prohibitive.

The loose-skinned Mandarin Orange is exported into America for the Christmas trade. 60,620 lbs. of Grapes were sent from California in 1928.

Fresh fruit is generally imported into Japan through agents of California fruit exporters on the basis of c.i.f. prices submitted. The freight charges are:—Oranges, 1.50 dol. a box; Lemons, 1.70 dol. a box; Grapes, 25 dol. a ton of 40 cub. feet. Landing charges are from ½ to 1 cent. a box.

The expansion of the fresh fruit markets is rendered exceedingly difficult by the quarantine laws and the high tariff. A modification downward of the tariff would tend to increase the sale by reducing the retail prices. At present imported fresh fruit can only sell to a very limited group of wealthy persons.

Canned Fruit.

American canned fruits are popular in Japan, though with a protection of 100 per cent. the Japanese canned fruit radically undersell the imported articles. The value of the Japanese canned fruit in 1926 was 543,790 dollars.

Pineapples grown in Formosa, Mandarins, Peaches and Loquats being the principal fruits processed.

A 2½ can of Formosa Pineapples retails at about 37 cents, native Peaches 35 cents, as again 58 cents for American Peaches; 71 cents for Apricots and 74 cents for Pears.

Peaches are the most popular canned fruit, those cut in halves being preferred to the sliced. Canned fruits are extensively used as gifts.

Importations are on a basis of c.i.f. prices, freight charges being 14 dol. per ton of 40 cub. feet.

Dried Fruit.

In 1929 the direct export of dried fruit to Japan totalled 1,705 tons, of which total Raisins represented 2,990,935 lbs., Apricots 272,440 lbs. Raisins owe their present large demand to promotion work carried on through the principal cities, a 1¾ oz. package selling for 5 cents. Imported in 25 lb. tins, they are repacked in Japan into the small cartons. Because of the spoilage caused by the hot, damp summer climate, their sale is limited to the winter months.

About 200 tons of Raisins a year are used in bread pasties by bakers in the vicinity of Tokio and Yokohama alone. There has been a decrease in the use of Raisins as a confection among children, chiefly because Raisins of an inferior quality have been imported into the country. Markets in Japan react quickly to downward changes in quality.

Apricots rank second in popularity, and retail at 28 cents a lb. Their importation has been curtailed because of a new Government regulation regarding sulphur content in the dried fruit, the amount they may contain under the Japanese law being considerably less than that which the fruit normally carries.

In Japan price is the first consideration; appearance is almost as important.

To establish trade, branches of the selling agency must be established in the large centres of population. Displays should be made for one year before any advertising or promotional campaign is conducted. Trade journals and women's magazines should be utilised for effective advertising. Testimonials to the high nutritive value of the products, posters, and display cartons, bargain sales of small packages, are among the means that would probably bring considerable results if skilfully managed.

Korea is not at present a potential market for American trade, and will not be for a considerable time to come owing to the standard of living and the economic condition of the bulk of the population.

The next article will be on China.

JAS. H. LANG.

New South Wales.

The Department of Agriculture is Progressively Handling Important Activities.

The Fruit Branch of the N.S.W. Department of Agriculture is divided up into two sections—(1) Instructional, and (2) Inspectorial.

The Instructional division is again sectionalised into—(a) Stone Fruit; (b) Pome Fruit; (c) Citrus Fruits; (d) Tropical and other fruits.

The work of this section comprises the investigation into various problems confronting fruitgrowers in relation to pruning, manuring, cultivation, stocks, insect pests and fungus diseases. The Branch working in close co-operation with the Entomological and Biological branches in the control of pests and diseases.

There are eight experiment orchards, situated in various parts of the State. At these orchards comprehensive experiments are being set out in an attempt to elucidate problems connected with the fruitgrowing industry.

In addition to the Departmental experiment orchards, a great number of experiments are being carried out on growers' properties, and in this connection the grower enters into an agreement with the Department that he will allow the experiment to be conducted for a definite period, which is usually five years. The officers of the Fruit Branch supervise the experiments and the collection of data.

The work of improving citrus trees by means of bud selection is being thoroughly carried out both in Departmental orchards and in private groves.

In conjunction with the plant breeding branch, the evolving of new and improved varieties of both deciduous and citrus fruits is being carried out.

The importation of new varieties from various parts of the world is also in hand. These trees are imported and grown under quarantine conditions. After a period of 12 months in quarantine budding wood is taken from the trees and propagated, and the original tree is destroyed.

The processing of Prunes and dried fruits is being investigated, and the preservation of citrus fruits and experiments in the cold storage of Apples and Pears is also in hand.

With the object in view of evolving a large thin-shell Macadamia Ternifolia Nut (Australian Nut), trees have been propagated from selected strains of this indigenous fruit. The cultivation of Pecan and Almonds on a commercial scale is also being looked into.

In addition to the investigational work, instructional work is given throughout the State on orchard matters.

The inspectorial side of the branch deals with the control of diseases in orchards and also inspection of all fruits and plants entering the State.

Lemon Curing.

Picking—Sweating—Storing.

Useful Information from G. W. Wickens, Superintendent of Horticulture, Perth, W.A.

LEMON CURING forms the subject of an interesting contribution to the W.A. "Journal of Agriculture," by Geo. W. Wickens, Superintendent of Horticulture, Perth. The information is as follows.

Picking.

Gather the fruit when it reaches a diameter of 2½ inches, and while still green or yellowish green. Do not store fruit which is fully yellow and tree ripe.

Each Lemon should be clipped (not pulled) from the tree in such a manner as not to remove the "button," and this can best be done by making two cuts—one when severing the fruit from the branch, and another shortening the stem to about one-eighth inch in length before placing in picking box. Great care must be exercised when picking to prevent injury to the skin of the fruit, any abrasion of which is almost certain to result in mould infection.

Do not tip the fruit from a picking box into a sweat box, but handle each fruit separately throughout the operation of gathering and storing; best results will be obtained if the pickers use gloves and the picking boxes are padded.

No Lemons should be stored which show skin blemishes from limb rubs, thorns, etc.

Sweating.

After the fruit is gathering it should be placed loosely in boxes—petrol cases are suitable—and stacked in a well ventilated shed from three to seven days according to weather conditions being dry or damp, so as to allow the fruit to dry off, i.e., "sweat."

Storing.

When sweating is completed the fruit can be stored for curing in several ways, according to the number to be treated and the facilities the grower is able to afford.

Method No. 1.—Wrap each fruit in sulphite tissue paper—Apple wraps—and pack loosely in cases lined with paper at bottom and sides and doubled over the top. Stack in a cool dark shed which must not be draughty. If shed cannot be darkened and draughts eliminated, cover the stacks of fruit with canvas sheets or bags, and during the early period of storage raise same occasionaally at night, preventing, as far as possible, great variations in temperature and humidity. Examine the fruit fourteen days after storage, removing any showing signs of mould. This can be discerned without unwrapping the Lemons. Examine again at later periods, the time of which will vary according to condition of fruit, but if it has been handled with care throughout, very little decay should be found.

Method No. 2.—After sweating, wrap each fruit in sulphite tissue paper. Line the storage cases with paper and pack fruit loosely in these, using chaff as a filler as follows:—Just cover the bottom of the case with a layer of chaff, place thereon a layer of Lemons; then fill spaces between and cover fruit with a further layer of chaff; then another layer of Lemons and so on until case is filled. Stack, handle and examine in shed same as advised for cases packed without chaff.

Method No. 3.—After sweating place the fruit loosely and unwrapped in storage cases lined with paper. Stack cases in a shed free from draughts in blocks of 40 to 50 and cover these with canvas tents. Place a dish of water inside each tent, thus maintaining humidity and preventing excessive shrinkage from evaporation of fruit. If drops of moisture appear on surface of fruit, raise the sides of the tents until moisture has disappeared; then drop again into position. Examine the fruit periodically for mould infection.

Method No. 4.—Underground cellars, if properly constructed, make satisfactory storage places, but require careful attention in preventing moisture from oozing through, or collecting on the walls, and floor during winter rains, and an air circulation must be provided, that will allow of gases given off from the fruit being carried out of the chamber. Finally, it must be remembered that no matter what method of storage is adopted, none will be successful if the fruit has been bruised or the skins scratched. Gathering the fruit at the right time and avoiding skin injury are essentials in successful Lemon curing.

Sulphate of Ammonia

WESTERN AUSTRALIAN TESTIMONY

Mr. S. E. Hambley, of Mount Barker, Western Australia, writes as follows:—

"I have an orchard composed of 900 apple trees, and two acres of mixed stone fruits. On these I make a practice of applying 2 lbs. per tree of Sulphate of Ammonia in conjunction with Super and Potash, and I have no hesitation in saying that the Sulphate of Ammonia is the most important portion of the fertilisers applied. Two acres of Dunn's Seedling, 1929 season, yielded 928 cases of Standard Export Fruit.

"I also use Sulphate of Ammonia on my oats, peas and kitchen garden crops, and the vigour and yield demonstrates always the value of this fertiliser.

"You are at liberty to use this letter as you feel disposed."

Evidently Mr. Hambley, like many primary producers throughout Australia, knows a good thing when he sees it, and is satisfied that ——

SULPHATE OF AMMONIA PAYS

Literature and Advice from:—

NITROGEN FERTILISERS PROPRIETARY LIMITED,
360 Collins Street, Melbourne,
or Box 235, Haymarket, Sydney.

PLUMS FOR EXPORT.

IN RESPONSE to a letter from the Victorian Fruit Marketing Association, the following information was supplied by the Supt. of Horticulture, Mr. J. M. Ward.

Adverting to the matter of cool storage and overseas shipment of Plums, I have consulted Mr. G. B. Tindale, Cool Storage Research Officer of this Department, who has reported as follows:—

"So far as variety is concerned, the later maturing Plums have the longest storage life, so these should be exported in preference to the early maturing varieties.

"The degree of maturity at picking time is important. The Plums should be picked when they are just showing the first signs of softening. If picked immature they will not develop any quality.

"It is most essential that the Plums be sent to the cool chamber as soon as possible after picking, and I would recommend cooling of the fruit before packing. The Plums could be first cooled to about 40 deg., packed at that temperature, and then transferred to a chamber at 31 deg., or they could be cooled to 31 deg. after picking, packed at normal temperatures and then transferred again to 31 deg. The disadvantage of the latter method is that the Plums get wet during packing, due to moisture depositing on the cold fruit. The Plums should be held at 31 deg. until shipment can be arranged. The Plums should be transferred from the cool store to the ship in an insulated truck and carried overseas at a temperature of 31 deg.

"So far as temperature is concerned it is most important that the Plums be kept at a temperature of 31 deg., and that they should be reduced to this temperature as soon as possible after picking. Delay in reducing the temperature or holding the Plums at a higher temperature will cause them to ripen, with the result that they would probably arrive overseas in an over-ripe condition."

A scrutiny of the available reports from the Agent-General's Office shows that last season the following prices were realised for the three leading export varieties:—

	Lowest Price.	Highest Price.	Average Price.
Variety.	½ c/s.	½ c/s.	½ c/s.
Satsuma..	10/-	14/-	11/6
Grand Duke.. ..	12/-	14/-	12/6
President	10/-	12/-	10/6

Some of these shipments showed a small percentage of waste, but this has not been deducted from the average price which refers only to the proportion of the consignments which landed in good order.

EXPORT OF PEARS FROM VICTORIA.

Southern Victoria Pear Packing Co. Successfully Launched.

IN ORDER to test the possibilities of Pear export to the United Kingdom, over 150 Pear growers in the Doncaster district have formed themselves into the Southern Victoria Pear Packing Co. Ltd. Some of the best known Pear growers in the State are among the directors of which Mr. J. Tully, of Doncaster, is the Chairman. Other members are:—Messrs. V. Lawford and F. Moore, of Blackburn, and T. H. Petty and A. E. Ireland, of Doncaster.

Growers in the Doncaster, Mitcham and Blackburn districts have for many years been well to the fore in the export of Pears.

If the fruit can be delivered overseas in a consistently good condition, there is every reason to expect payable prices.

Mr. F. J. Garford has sailed for London as the company's representative to supervise the sales. He will have six or eight weeks in which to prepare for the arrival of the produce and to provide for the handling of the deliveries.

The fruit will be packed in one type of case (the long bushel), and each package will bear the company's special label.

A representative has also been appointed to attend the cool stores while the fruit is being prepared for shipment.

H. WILSON
Wholesale Fruit Merchant and Commission Agent,
No. 10. New Wholesale Fruit Market., Melbourne.
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Consignment shipments solicited on behalf of leading Fruit Brokers and Salesmen throughout England and Continent.

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WHITE & SON LTD.,
(Covent Garden Branch),
36 Long Acre, LONDON, W.C.2.

ROGERS, WHITE & CO.,
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FRUIT BROKERS CO.,
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WHITE & LEATHERLAND,
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NEWCASTLE.

For Full Particulars Apply to

TASMANIA: H. JONES CO. LTD., Old Wharf, HOBART.	SOUTH AUSTRALIA: GEORGE WILLS & CO. LTD., 3 Grenfell Street, ADELAIDE.	VICTORIA: PARNHAM PTY. LTD., Broken Hill Chambers, 31 Queen St., MELBOURNE.
NEW SOUTH WALES: BATLOW PACKING HOUSE & COOL STORES, RURAL CO-OPERATIVE SOCIETY LTD., Box 48, BATLOW.	WEST AUSTRALIA: GEORGE WILLS & CO. LTD., 156 St. Georges Terrace, PERTH.	NEW ZEALAND: J. A. REDPATH & SONS LTD., 37 Johnston Street, WELLINGTON.

There will be close supervision over the grading and packing as well as the usual departmental inspection of the fruit. The Pears are being pre-cooled and shipped under the company's registered label to their representative, who will take delivery and make all arrangements for the distribution and sale of the produce.

There have been applications for over 1,000 shares in this company, which has been formed with a nominal capital of £5,000 in £1 shares. The shares are called up at the rate of 5/- a share on application, 5/- on allotment, and the balance when necessary. A levy of 1/- per case on all Pears exported has been decided on. A substantial sum will probably be raised in this way as applications have been made for space for 35,000 cases.

Shareholders will be allowed to ship 100 cases of fruit for each share held, and owing to the additional care taken in the handling, grading, and packing of the fruit it is expected there will be greatly increased trade in the course of two or three seasons.

* * * * *

Owing to unseasonable weather, late spot developed on the Pears, and growers have been spraying with lime sulphur, 1-80. This fungus infection is stated to have reduced the quantity available for shipment.

* * * * *

There is much enthusiasm regarding the establishment of the Southern Victoria Pear Co. Ltd.

PEAR EXPORT FROM GOULBURN VALLEY.

40,000 Cases Being Shipped.

Fruit is of High Quality and Splendidly Packed.

FROM THE GOULBURN VALLEY (Victoria), some 40,000 cases of Pears are being exported during the present season. In a recent wireless talk, Mr. J. M. Ward, Superintendent of Horticulture, stated as follows:—

It is interesting to relate that the Goulburn Valley is this year making a record shipment of W.B.C. Pears. In the past, the Valley has shipped very few Pears, but this year there will be something like 40,000 cases shipped. Over 10,000 cases have already gone.

The fruit is of excellent quality, and the packing and pre-cooling all that can be desired.

The Pears received a careful inspection whilst on the benches prior to packing, and each individual case was inspected for the quality of the pack. Temperatures of the weather, fruit, cool chamber, rail trucks and ships' holds were carefully recorded. The average temperature of the fruit when taken from the cool chamber was 38 deg. F., the chambers about 30 deg. F., trucks before loading varied from 49 deg. to 78 deg., and upon arrival at ship's side, from 43 deg. to 59 deg., that is, some trucks were 43 deg., others 59 deg. The atmosphere during loading operations in the Valley varied from 62 deg. to 93 deg.; the ship's hold during stowage, from 42 deg. to 47 deg.

If these Pears are carried at the right temperature, say 29 deg. to 30 deg. F., during the sea voyage, they should arrive in excellent condition; and if the prices obtained are satisfactory, I anticipate an export next year of 100,000 cases of W.B.C. Pears to England from the Goulburn Valley.

VICTORIA.

News and Notes.

The Sugar Enquiry.—Evidence was tendered by representatives of the berry growers, showing the adverse effect of the high sugar prices. Not only the factories, but also the housewives were taking much less fruit than usual. It was submitted that the sugar industry was unduly protected, and that the fruitgrower in particular, was called upon to bear more than his share of the burden.

Export.—The fruit crop has been greatly diminished by unseasonable weather, heavy rain and strong winds.

The export is reckoned at about 300,000 cases of Apples as compared with 1,250,000 last year and 150,000 packages of Pears, as against 450,000 packages last season.

Blackburn, Mitcham and Burwood.—Fair crops of Pears are being harvested despite seasonal disadvantages. Brown rot appeared in the Peaches, and late spot developed on some of the Pears.

Margetson & Co. Ltd.
Fruit Importers and Salesmen
30 James Street and James Street Warehouses,
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COVENT GARDEN, LONDON, W.C.,
and at Jamaica House,
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MEETING AT PAKENHAM EAST.

Under the auspices of the Victorian Fruit Marketing Association, a meeting was held at Pakenham East on January 21, Mr. H. G. Colombie presiding. Mr. A. A. Hammond, Senior Orchard Supervisor, gave a valuable address on the subject of pest control, dealing with codlin moth, black spot and brown rot.

Mr. Hammond was cordially thanked on the motion of Messrs. Ahern and J. M. Jacobs.

V.F.M.A. Appreciated.—Mr. C. M. Griffeth, Vice-President, traced the history of the Victorian Fruit Marketing Association and recounted the valuable service already performed.

Mr. C. J. Parnham also told of the value of the V.F.M.A. combination of growers and shippers being most desirable.

Agricultural Department.—It was decided to write to the Minister for Agriculture to find out the cost of the services rendered to the fruit industry.

Fruit Cases.—Mr. C. P. Nobelius stated that locally-made hardwood cases such as the Canadian shape were satisfactory.

Rates of Exchange.—In answer to a question, the Chairman explained the method of calculating rates of exchange which would be received by growers sending fruit on consignment.

Fruitgrowers' Research Committee.—Mr. J. W. Bailey stated that the grower members of the Victorian Fruit Marketing Association had formed a Research Committee, believing that it was possible to improve fruitgrowing cultural methods. A programme of orchard practice was being drafted, and growers were invited to send in experiences and suggestions. The matter of biennial cropping was the first one which would receive close attention.

VICTORIAN PLUM CROP.

The Assistant Minister for Agriculture (Mr. R. T. Pollard) advises that with regard to the disposal of the Plum crop, sympathetic consideration had been given to this by the Officers of the Department of Agriculture. The growers in various parts of the State are faced with a large quantity of Plums, and practically without an outlet. Arrangements have been made to deliver case quantities to householders at the price of 4/6 per case, which includes all charges, such as freight and delivery to any suburban address. This method of distribution was undertaken in 1929, and proved thoroughly satisfactory, and Mr. Pollard has every confidence in recommending public interest and bringing this matter under the notice of consumers generally. This campaign is under the management of the Associated Fruitgrowers' Co-operative Organisations, and orders should be sent to the Manager (Mr. T. E. Butler), 358 Collins-street, Melbourne.

Cobram.—The year ending December, 1930, has been a very successful one for the Cobram Fruit Packing Co. Ltd. Already 30,000 cases of Oranges have been marketed, and another 10,000 cases of Valencia Oranges and Lemons will be put through the shed before the end of the season. This year about 100,000 cases of Oranges and Lemons will be put through the district.

Croydon.—The Autumn Show of the Croydon and District Agricultural and Horticultural Society will be held on March 28, 1931. The Secretary is Mr. A. E. Opperman, Croydon.

QUEENSLAND.

1929—Area under fruit	37,620 acres
Area under vines	1,750 acres
Total	39,370 acres

THE PRINCIPAL FRUIT is the Banana, of which there were 19,400 acres under cultivation in 1929, the crop being valued at £928,000. It is estimated that during the 1930-31 season the total area will increase by 1,000 acres. There is a prohibitive duty against the importation of Bananas, thus giving the Australian-grown product command of the trade. Recently there is a tendency to reopen the industry in the far North and quite a number of large areas have been, and are being, planted. Following the total eradication of all the Bananas growing in the Currumbin and Tallebudgera Valleys, which were wiped out some years ago with bunchy top, big areas have again been planted up there, and excellent results are being obtained.

Scientific research into various matters relating to storage and transport is still being conducted. Recently a consignment of Bananas was landed in Perth in excellent condition, after being transported overland by train.

Investigation into the cause and methods of control of bunchy top is still being carried out, and fresh details bearing directly on the subject are continually being brought to light.

The Pineapple ranks next to the Banana, there being about 3,400 acres under cultivation during 1929, the yield being over 857,000 dozen, valued at £212,300. The Smooth-leaved Cayenne variety is most generally grown for canning, whilst the rough-leaved Ripley Queen finds ready favor as a fresh fruit.

The following are returns of fruits grown for the year 1929:—

Bananas, 2,940,700 bunches.
Pineapples, 857,000 dozen.
Citrus, 295,000 bushels.
Mangoes, 45,600 bushels.
Custard Apples, 31,700 bushels.
Apples, 177,000 bushels.
Pears, 14,000 bushels.
Peaches, 109,000 bushels.

Do not run any Financial Risk with your Fruit
but Consign it to
HEDLEY GEEVES LIMITED
Telegraphic Address:
"Apples, Brisbane."
(Hedley Geeves, Managing Director)
Registered Shipping No. 6.
FRUIT EXCHANGE——BRISBANE
SELECTED AGENTS FOR:
Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.
Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

Plums, 56,000 bushels.
Papaws, 87,500 dozen.
Other fruits, 23,500 bushels.
Strawberries, 330,300 quarts.

Fruitgrowers in Queensland are organised by Act of Parliament, operating through the Committee of Direction of Fruit Marketing. Fruit trains run regularly to the southern markets and convey large consignments to Sydney and Melbourne.

QUEENSLAND FRUIT IN MELBOURNE.

The Melbourne representative of the Committee of Direction of Fruit Marketing advises as follows:—

The total tonnage of Queensland fruit which arrived in Melbourne during January was 2,416 tons, consisting of Bananas, Sugar Bananas, Pineapples, Passion Fruit, Papaws, and Mangoes.

The Sugar Bananas are coming down to what is practically regarded as a special order, and it is to be regretted that the public of Melbourne do not know the quality of this fruit. In Sydney and Brisbane there is a great demand for Sugar Bananas and Ladyfinger Bananas, and prices are usually high.

The season for Papaws, Mangoes and Passion Fruit is about finished, as the production in Queensland can be absorbed by local and other markets closer to Brisbane.

The general quality of Bananas at present is very good. the Department of Agriculture having very few complaints to make, but in general with other fruits, prices to growers are very unsatisfactory.

Queensland.

Brisbane (24/1/31).—Roma Grapes, 8/- to 12/- case; Stanthorpe, Grav. (colored), 10/- to 12/- per case, (green) from 5/- to 8/- per case; William's Favorite Apples, 7/- to 10/- case; Jons., 10/- to 12/- case; cooking Apples, Cleo., 8/- to 10/- case, others 5/- to 8/-; G. Smith, 9/- to 12/-. Southern Fruits.—Vic. Pears, 7/- to 8/- case; N.S.W. Pears, 7/- to 9/- case; N.S.W. Peaches, 2/6 to 4/- case; Nectarines, 3/- to 9/- per case; Valencia Oranges from N.S.W. (good quality), 10/- to 13/- case; second grade, 9/- to 12/-; southern Lemons, 11/- to 15/- case; Grapefruit (California), 28/- to 30/- per large case; Pears, Stanthorpe, 3/- to 8/- case; Mangoes from the north, 5/- to 8/- case; local Papaws, 2/- to 5/- case; Passion Fruit, 6/- to 10/- case, second grade 1/6 to 4/- case; local Lemons, 4/- to 8/- case; Peaches, Stanthorpe, 1/6 to 4/- case; Pineapples, smooth leaf, best 5/- to 7/6 case, inferior 3/6 to 4/6 case; Ripleys, 5/- to 7/- case; Nectarines, 4/- to 9/- case; Plums, President 5/- to 7/- case, Pond's Seedlings from 5/- to 7/-, Burbanks 4/- to 8/- case; Tas. Apricots, 6/- to 8/- case; N.S.W. Plums (President), 8/6 per case, Ang. 8/- to 10/-, Wicksons 8/- to 10/-; G. Smith Apples from the south, 12/6 per case; local Mangoes, 1/6 to 3/6 case.

FRUIT FOR LONDON.

The fresh fruit trade between London and some of the overseas Dominions has grown to immense proportions.

London has always been the main centre of the Australasion fruit trade.

Cargoes of Apples are discharged at the Royal Victoria and Albert, King George V. and Tilbury Docks by modern types of cranes or by chain and gravity conveyers which lift the cases from the cool chambers of the ships and distribute them to craft for water conveyance or deposit them in the well-lighted, airy and perfectly equipped warehouses provided by the Port of London Authority. Here they are sorted to merchants' requirements, and delivered to railway waggons or vans for conveyance to the London markets, such as Covent Garden, Spitalfields and Borough, which are within easy reach.

As each of the docks referred to is railway connected, fruit can be speedily despatched to any destination.

RIDLEY & HOULDING
Covent Garden Market
LONDON
Specialists in Australian Fruit.
Solicit consignments of Apples, Pears, Etc.
Our record of over 30 years' standing in the handling of Australian fruit, with satisfactory results, is a recommendation for growers to ship their fruit to our house.
Representatives—
International Fruit & Mercantile Company Ltd., Melb., Vic., Australia; and A. J. Walshe & Co., Hobart, Tasmania.

TASMANIA
Leading Australian Firm of Fresh Fruit Exporters.
Manufacturers IXL Jam and Canned Fruits.
Hop Factors—Largest Cool Stores for Hop Storage in Commonwealth.
All Orchard Supplies available at all times.
Agents for—
Associated Evaporated Apple Manufacturers, London Assurance Corporation, Federal Steam Navigation Co. Ltd., Scottish Shire Line of Steamers, Osake Shosen Kaisha.
Correspondence Invited.
H. JONES & CO. LTD.,
HOBART

J. G. MUMFORD
(Established 1906)
Fruit & Vegetable Salesman
Account Sales Posted Daily
APPLE EXPORTER
"Fruit Exchange,"
449-451 FLINDERS LANE
and
No. 35 Wholesale Fruit Market.
MELBOURNE
Reference—Satisfied Growers in all States

Pumping Plants, Engines, etc.——
We are recognised as Specialists in engineering jobs for orchard and farm
Consult us for your requirements
RUSSELL & CO. - - Engineers
BOX HILL

Cape Gooseberry (Physalis Peruviana).

Market Under Supplied with this Fruit. Seasonal Cultural Directions.

(By Geo. W. Wickens, Superintendent of Horticulture, Perth, W.A.)

SUGGESTIONS HAVE BEEN MADE that Cape Gooseberries would be a profitable sideline for group and other settlers in the South-West of Western Australia, and there is no question that a ready sale is obtainable on the local markets, where good quality fruit of this kind is often not available in sufficient quantities to meet the demand.

On the coastal lands where the sea influence prevents heavy frosts, fruit is produced throughout the greater portion of the year, but in the hills near Perth, and in districts further south where winter frosts are prevalent, very little fruit is harvested during the winter months.

The plants are easily propagated, seeds being sown in beds or boxes like Tomatoes, in autumn and transplanted in spring. They must be protected from frost in the seed beds or boxes during the winter and after transplanting should be sheltered by pieces of bush until damage from frost is no longer apprehended. 7ft. x 7ft. on the square is a suitable distance apart, and an acre of land so planted will contain 889 plants.

A fair average production per plant per annum is 4 lbs. of fruit, and the price in the Perth market ranges from 4d. to 8d., say an average of 6d. per lb.; so that from an acre of land a gross return of 3,556 lbs. at 6d., or £89, could be expected.

One big expense in connection with production is gathering the fruit, an average day's work for one person being 40 lbs., but where the settler is assisted by a family, boys and girls will operate as speedily and quite as effectively as adults, and the occupation, though somewhat tedious, is not laborious.

In autumn the plants should be cut hard back, and the new growth which shoot out from the crown after the advent of the seasonal rains produce fruit during the following spring and early summer. Profitable crops will be gathered for three to four years, after which the plantation needs renewing, and new land, that is, land on which Cape Gooseberries have not previously been grown, must be chosen for the purpose. A deep rich loamy soil, moist in summer and well drained in winter, is ideal, but where this is not available, quite successful plantations can be established on poorer land either of a gravelly or sandy nature, provided cultivation and manurial requirements receive proper attention. Liberal dressings of stable manure will give excellent results, but this is not often obtainable in sufficient quantities, and combined fertilisers that are sold as potato manures are quite suitable for Cape Gooseberries, the quantity to be applied being governed by the nature of the soil, and may range from 4 cwts. to 10 cwts. per acre, to be applied in two dressings, half in April, and half in August.

The worst insect pest affecting Cape Gooseberry plants in this State is the potato moth and when setting out the plantation, care must be taken not to place it near land on which potatoes have recently been grown, particularly where tubers affected with moth have been allowed to remain in the ground.

If potato moths are present the method of guarding against their attack is to spray the plants with arsenate of lead, using 1½ lbs. of powdered or 3 lbs. of paste in 50 gallons of water, and 1 lb. flour added to form a spreader.

This treatment is only effective before the caterpillars tunnel into leaves or stems, after tunnelling the remedy lies in cutting out and destroying the infected portions.

Red spider and bryobia mites are also troublesome. These can be controlled by applications of sulphur either dry or as atomic (liquid). Should the pest be present when fruit is ripening sulphur may be replaced by "Clensel"—a non-poisonous spray material which can be used for this purpose at a strength of 1 in 25.—"Journal of Agriculture," W.A.

CLEAN AND HEALTHY FRUIT

Sound and unblemished fruit commands a ready market. That is why growers all over Australia demand Shell Spraying Oils--SHELL WHITESPRAY, the Summer Oil, and SHELL REDSPRAY, the Winter Oil--they safeguard the health of the trees, and prevent injury to the fruit.

Write to The Shell Company Ltd. for their booklet, "Profitable Fruit Spraying"--FREE

SHELL SPRAYING OILS

505

WESTERN AUSTRALIA.

Agricultural Department Performing Good Service.

VALUABLE RESEARCH WORK is being conducted by the Western Australian Department of Agriculture, including the following:—

(1) **Manuring.**—Experimental work in testing the effect of various fertilisers on Grape vines.

(2) **Apple Weevil.**—Experimental entomological work in connection with the study of the life history and measures of control of the Apple weevil, Otiorrhynchus cribricollis.

(3) **Fruit Fly Baits.**—The testing of various materials to use as baits for the destruction of fruit fly and experiments with glass jars and small tins to ascertain which is the most effective to use as traps.

Cold Storage: Biennial Cropping.—In addition to the above, the Officers of the Agricultural Department are co-operating with officers of the Council for Scientific and Industrial Research in investigations into the non-parasitic diseases of Apples, especially those of cold storage. Attention is also being given to factors responsible for the alternation of heavy and light crops.

The Horticultural Division of the Department of Agriculture is administered by the following:—

Hon. P. D. Ferguson (Minister for Agriculture); Messrs. Geo. L. Sutton (Director of Agriculture); Geo. W. Wickens (Superintendent of Horticulture); H. K. Johns (Viticulturist); L. J. Newman (Economic Entomologist); H. Pittman (Plant Pathologist); H. Elliott (Assistant Plant Pathologist); T. Hooper (Port Inspector).

The Orchard Supervisors are as follows:—Messrs. S. E. Bennett, R. L. Cailes, V. Cahill, W. H. Read, A. Flintoff, D. L. Breen, A. C. Vaughan, W. P. Fears, Chas. Simmons, R. C. Owen.

There are three Science Workers:—Messrs. H. R. Powell, B. A. O'Connor and H. Andrewartha.

Mr. B. J. Gartland is the Market Inspector.

EXPORT OF FRESH FRUIT FROM WESTERN AUSTRALIA.

During the year ending June 30, 1930, Western Australia exported 227,820 cases of fruit, consisting of 159,214 cases of Apples, 43,052 Grapes, 22,491 Pears, 2,280 Oranges, 378 Plums, 241 Peaches, 77 Lemons, 31 Tomatoes, 21 Quinces, 20 Nectarines, 13 Grapefruit, and 2 cases of Passionfruit.

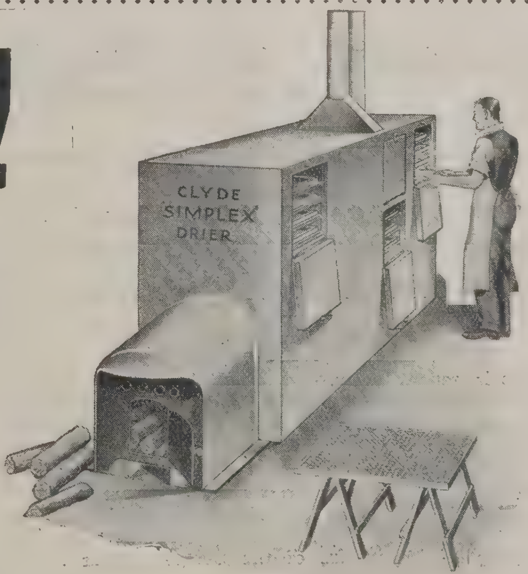
106,611 cases of fruit were sent to the Continent and 52,939 cases to Great Britain. Quantities were also sent to other countries, including 25,759 cases to Colombo, and 22,548 cases to Singapore, 6,636 to Port Said; 5,761 to Batavia; 5,686 to Sourabaya; 769 to Bombay; 600 to Rangoon; 260 to New Zealand; 200 to Durban; and 50 to Hong Kong.

WESTERN AUSTRALIA.

Fruit Acreage and Production.

For the season 1929-30 there were 18,871 acres under fruit and 4,964 acres under vines.

The following is a statement of the acreage of the several fruits, the production in 1929-30 being shown in brackets:—Apples, 10,885 acres (442,243 bushels); Oranges, 2,856 acres (218,386 bushels); Pears, 1,015 acres (87,461 bushels); Plums, 915 acres (70,732 bushels); Peaches, 807 acres (65,547 bushels); Apricots, 688 acres (62,193 bushels); Lemons, 503 acres (58,180 bushels); Figs, 350 acres (34,950 bushels); with smaller areas devoted to Mandarins, Nectarines, Quinces, Bananas, Strawberries and other small fruit.



Don't Waste Your Fruit!

With a CLYDE SIMPLEX DRIER you can dry any kind of fruit or vegetable. Many growers are turning waste into profit by installing one of these machines. Simple to install, easy and economical to run. Anything dried with a SIMPLEX will keep indefinitely.

A user writes: "I have successfully treated peaches, plums, apples, potatoes . . . finished articles equal, if not better, than anything I have seen."

MADE IN SIZES TO SUIT ORCHARDISTS OR LARGE FACTORIES.

Write To-Day for Particulars:

THE CLYDE ENGINEERING CO. LTD.

GRANVILLE, N.S.W.

GOODMAN'S FRUIT TREES

They yield Largest Crops of Finest Fruit, commanding highest market prices.

Clean, Healthy, Well-grown Trees in all varieties, carefully packed and promptly despatched to all parts of Australia. Goodman's Fruit Trees prove profitable wherever planted.

CATALOGUE FREE

C. J. GOODMAN PICNIC POINT NURSERIES BAIRNSDALE

THE PORT of HULL

is

The Fruit Centre

SERVING

Great Britain for the North & Midlands & Continent for all Ports in Northern and Eastern Europe

Daily sailings provide unrivalled situation for re-export of EMPIRE FRUIT

Specially constructed REFRIGERATOR VANS carry FRUIT direct from STEAMER to inland destinations by EXPRESS TRAINS

RAPID HANDLING QUICK DESPATCH LOW CHARGES

London & North Eastern Railway

LARGEST DOCK-OWNING RAILWAY IN THE WORLD

Full information supplied by:—

AUSTRALIA.—Burns, Philp & Co. Ltd., 7 Bridge-street, Sydney; 312 Collins-street, Melbourne, and Branches.

NEW ZEALAND.—J. A. Redpath & Sons Ltd., 181 Cashel-street, Christchurch, and Branches.

N.S.W. CENTRAL CITRUS ASSOCIATION.

Is Now Winding Up.

Regret is generally expressed that the N.S.W. Central Citrus Association has decided to cease operations—owing to the lack of support from some of the leading citrus packing houses.

Mr. H. G. Such, who was manager of the C.C.S., has transferred to the Producers' Distribution Association.

Mr. P. S. MacDermott, market representative of the N.S.W. Fruitgrowers' Federation is attending to the winding up of the affairs of the Central Citrus Association.

* * * * *

In the meantime the matter of N.S.W. representation on the Federal Citrus Council is being taken up with the principal citrus packing companies.

COMPANY REGISTRATIONS.

Bohte Natural Fruits Limited—Regd. 29/12/30. Capital: £1,000 in 200 £5 shares. Objects: To acquire a certain patent for an invention for keeping fruit and vegetables in their natural state without the use of preservatives, etc. Subscribers to memo. of Assn.: Thomas W. Tennant, H. Badgery, Robert D. W. Towns, Donald D. McIntyre, William S. Walsh, Spilsbury M. Butler, and Reginald E. Ludowici (1 share each). Regd. office: Sydney. (Lodged by Percy C. Law, solicitor, 251 George-street, Sydney.)

Hewitt & Co., City Markets, Sydney, fruit and vegetable merchants—Com. 16/12/30. Protrs.: Ernest Hewitt and Esma F. Phillips. Regd. 17/12/30.

"To Choose the Best is Wisdom"

ALL APPLE GROWERS

should become familiar with

The "Lightning" Model 18

In handling apples for both export and the local market, a lot of time and money can be wasted. Because there are so many individual apples to be sorted, sized, wrapped, packed and lidded in a short time, it is difficult to maintain a high standard of pack and returns suffer. The only way in which this can be avoided is by having a machine specially designed for the purpose.

THE "LIGHTNING" MODEL 18 REMOVES ALL THE DIFFICULTIES ASSOCIATED WITH PACKING LARGE QUANTITIES OF APPLES in one quality.

It can be inspected at our Showrooms, 517 Albion Street, West Brunswick, and we will be only too pleased to demonstrate its many advantages to you.

Our Catalogue, No. 7, is now to hand, and among many other Models the Model 18 is both illustrated and described.

The "Lightning" Fruit Grader Co.

517 Albion Street, West Brunswick, N. 12, Victoria.

Southern Fruit Company, Produce Markets, Quay-street, Sydney, fruit and produce merchants—Com. 15/12/30. Proptr.: William Yockson Gee. Regd. 15/12/30.

Mirrool Fruit Export Company Limited—Regd. 24/12/03. Capital: £5,000 in 250 £20 shares. Objects: To acquire the business carried on under the name of Mirrool Fruit Export Company. Subscribers to memo. of Assn.: P. H. Morton, H. J. Luke, J. H. Noble, J. Chung, H. Noble, M. Luke, and Annie E. Morton (1 share each). Regd. office: Griffith, N.S.W.

The Chilean Nitrate Agricultural Service, 7 Wynyard-street, Sydney, N.S.W., are advertising Chilean Nitrate of Soda, for producing a heavy crop of high-quality fruit. Attention is directed to their advertisement in this issue.

Messrs. L. P. Rosen & Son, Fernhill Nurseries, Pennant Hills-road, Carlingford, N.S.W., are now booking orders for all kinds of fruit trees. Their specialities are fruit trees, Rose plants and Kunde secateurs. Catalogues obtainable free on application.

Messrs. Bender & Co. Pty. Ltd., 100 Elizabeth-street, Launceston, Tasmania, are shipping agents, fruit exporters and cool storage proprietors. They have accommodation for 25,000 cases. Attention is directed to their advertisement in this issue.

Sulphate of ammonia is being advertised by the Nitrogen Fertilisers Pty. Ltd., 360 Collins-street, Melbourne. Attention is directed to their advertisement in this issue, wherein a testimonial from West Australia is published.

APPLE AND PEAR EXPORT CONFERENCE.

Mr. H. V. Smith, Batlow Packing House and Cool Stores Rural Co-op. Society Ltd., who was a delegate to the recent Australian Apple and Pear Export Conference, writes in terms of appreciation. He states "On looking back I feel much good was done, and if followed up something tangible should result."

FLORIDA FREE OF FRUIT FLY.

As Florida is deemed to be free of the fruit fly all quarantine regulations have been lifted as from November 10 last. The United States Government expended approximately 6,355,000 dollars (£1,588,750), in an effort to completely exterminate the pest from the State.

Mr. Lee A. Strong, Keeper of the Plant Quarantine and Control Administration, stated that in 1929 a thousand properties in Florida were found to be infested by the fruit fly. Most of the infestations were discovered during the spring and early summer. At present there is no known infestation in the entire State.

The ridding of the dreaded fruit fly from Florida is the story of a great achievement.

Teacher: "Sammy, what were the leaders of Indian tribes called?"

Sammy: "Chiefs, ma'am."

Teacher: "Correct! Now what were the chief's wives called?"

Sammy: "Mischiefs."

SHIPMENTS TO ROTTERDAM.

(To the Editor, "Fruit World.")

Sir,—Being unable to controvert the facts I submitted against his original statement, Mr. J. W. Barker, in your January issue, now suggests I was not aware of the position of the markets and was guilty of an error of judgment in not intercepting the "Port Hunter" Rotterdam cargo.

I would point out that I was fully acquainted, not only with the Hamburg position, but with the position on every other market, when I jointly arranged the coolstoring of the "Port Hunter" Rotterdam cargo at the Hook of Holland, and I was also aware that the Hamburg brokers were so pessimistic regarding the sale of the large quantities yet to be disposed of on their markets, that advices were sent out not to forward any more fruit to Hamburg, so that I knew perfectly well what I was doing.

Further, there was certainly no error of judgment on my part in not having the cargo intercepted and sold at another port, for the very simple and obvious reason that all other markets were not only already overloaded, but that their future prospects looked even worse, as was in fact verified later, whereas Rotterdam was expecting no further shipment from anywhere after the "Port Hunter." As a fact, we did intercept the cargo, and sent it to the Hook of Holland, which was, in our opinion, the only right place.

At no time was there any question that my Rotterdam principals would not have released their portion of the "Port Hunter" cargo, had such action been in the interests of the fruit, and the mere fact that the members of the organisation I represent have done it in the past is sufficient answer. Mr. Barker knows, however, or should know, that no cargo can be diverted by shipowners unless all consignees are agreed. We held 27,000 of the 30,000 cases, and yet we were unable at first to deal with the cargo as we wished because of the trouble caused by the outside holders of 3,000 cases, who insisted on Rotterdam discharge. It was only after we had decided to unload straight into cool stores at the Hook of Holland (only a few miles from Rotterdam), and, if necessary, pay the cost of transportation on the 3,000 cases from the Hook to Rotterdam, that the consignees of the 3,000 cases also decided to cool store their fruit, with which they eventually dealt as we did. It will be seen what little hope there would have been of their agreeing had we suggested diverting the cargo entirely away from Holland.

As the entire cargo could not have been diverted, transhipment elsewhere of a portion would have been the only alternative, but as Mr. Barker takes exception to the small coolstorage charge, one wonders what he would have said of the higher expenses of transhipment, not to speak of the resultant deterioration in condition of the fruit, having regard to the abnormal heat.

Mr. Barker refers to the custom of brokers to split shipments in several sales when necessary, but complains of this having been done at Rotterdam. It was patent to all it would not have been in the interest of the fruit to have sold the whole cargo on arrival at the very low parity which had long before been established by Hamburg, and it was preferable to offer the cargo in various parcels, but it was equally obvious that the fruit would have suffered seriously in condition had it been left on the wharves during the heat wave, with 86 per cent. in the sheds, hence the decision to cool store. It is equally obvious that once the fruit was cool-stored there was no need to hurry sales, and that disposal could take place at such periods, and in such quantities as marketing conditions warranted.

Mr. Barker stated that the arrival of the "Port Hunter" at Rotterdam "knocked the bottom out of the market." The facts are that the "Port Hunter" arrived at Rotterdam on June 19, and that the serious break in prices, started in Hamburg as early as June 4, became more and more intensified as sales went on, until the end of the season, the markets never recovering. The Rotterdam cargo was spread over four sales, beginning July 3 and ending August 5.

Mr. Barker seems to fear that something I have said "may lead shippers and growers to think that my knowledge of overseas marketing is still somewhat elementary." Comparisons are always odious, and I will only say that whilst Mr. Barker has only been connected with the export of fruit (and only on this side) for a comparatively short period, the whole of my commercial life, except whilst in the army, has been entirely and solely devoted to the marketing of fruit, and now extends over 32 years. It would seem from the fact that I have acted in various countries for the members of my organisation, and that I have been appointed to act for them here, that my knowledge is considered sound by people who should know, and as for the view held by

Rockhampton

The starting point for the Great Queensland Central Railway has a population of 30,000, and offers a good market for your fruit.

ORCHARD FRUIT SUPPLIES
offer a prompt and reliable selling service. Best Prices. Prompt advices and returns.

Reference:—Australian Bank of Commerce.
'Phone: 1584.
P.O. Box, 223. Brand: ORCHARD RTON.

FRUIT TREES

ONE GROWER SAYS—
"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

Your Trees Need Nitrogen

See That They Get It
In The Right Form.

Chilean Nitrate of Soda

The Surest Guarantee of a Heavy Crop of
HIGH QUALITY FRUIT

OBTAINABLE FROM LEADING FERTILIZER FIRMS

Write for Pamphlets:—"The Fruitgrower's Book of Manures"
"Manures for Citrus Trees"

Supplied Gratis by G.P.O. Box 1197 HH
The Chilean Nitrate Agricultural Service
7 Wynyard Street - - Sydney

growers and shippers on the matter, I think they are quite capable to judge for themselves.

I now deal with the general aspect of Mr. Barker's misguided statement regarding Rotterdam as a market. The gravamen of his contention is that Hamburg is the best distributing centre for central Europe, and that Rotterdam should receive little consideration. In answer, I shall only quote American shipments from August to December 13, 1930, which is the latest American report to hand.

This shows:

Exports of Apples from America and Canada:
To Hamburg, 2,003,559 bushels.
To Rotterdam, 2,197,959 bushels.

By using more unsound premises, Mr. Barker, on January 1, again arrives at false conclusions and repeats "that it was proved beyond doubt that the 30,000 Victorian cases, ex "Port Hunter," were many thousands in excess of what the Rotterdam markets could absorb satisfactorily."

I have just received a Rotterdam circular reporting the auction sales of the week ending November 29, 1930. It advises that apart from the sale of over 150,000 bushels Spanish Oranges and other fruit, **230,000** bushels of Canadian and American Apples were sold **in that one week** (we are not speaking of 30,000, but nearly eight times as much); not only did this important quantity **in one week** not "knock the bottom out of the market," but the quotations are quite good, and compare more than favorably with the prices obtained on other markets. In the week ending December 6, over 200,000 bushels of Spanish Oranges and 60,000 fresh Apples were sold, whilst 244,000 bushels Apples and 10,000 bushels Pears, ex further arrivals, were advertised for sale at the next week's auctions.

I think these incontrovertible facts will show that the claims made by your corerspondent are untenable.

Before closing, I offer for comparison the short-sighted policy of restricting distribution and consumption, to the longer view we take on marketing. It is now reported that the German Government is contemplating either the total prohibition of importations of Australian Apples, or else decree a material increase of duty. Exporters will decide whether it was better to cultivate an additional, and what may prove to be an alternative, outlet, or ignore a market well catered by our competitors, and in the process again overload the others, with their attendant unsatisfactory results. We certainly not only believe in increasing consumption by widening distribution through world recognised markets, but we actually put that belief into practice for the benefit of our friends. —Yours faithfully,

H. G. COLOMBIE,

The hard thing about making money last is making it first.

Love makes the world go round the bend and park in a lane.

When picking your friends be careful not to pick them too much.

She: "Now you pride yourself on being able to judge a woman's character by her clothes. What would be your verdict on my sister over there?"

He (looking at her sister's scant attire): "Insufficient evidence."

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

NEW SOUTH WALES.

Sydney:
Chilton, F., City Fruit Markets.

VICTORIA.

Melbourne:
Andrew, Fred. J., 416 Lit. Collins St.
Cave, F., & Co., Melbourne.
Colombie, H. G., Temple Court.
Davis, J., Pty. Ltd., Western Market.
Mellor, F. R., 440 Elizabeth Street.
Millis, A., & Sons, Western Market.
Lister, G., Western Market.
McLean, N. N., Pty. Ltd.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Western Market.
Renouf, R., Western Market.
Ross, J. W., Western Market.
Scott & Edwards, King Street.
Silbert, Sharp & Davies, Western Market.
Stott & Son, T., Western Market.
Tim Young & Co. Pty. Ltd., Western Market.
Vear, F. W., 49 William Street.
Wilson, H., Western Market.
Woolf, G., Western Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Western Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., 88 Collins Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

GREAT BRITAIN.

London:
Charles Knights Ltd.
M. Isaacs & Sons Ltd.
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Garden.
Dan Wuille & Co. Ltd.
The White Service,
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
Connelly, Shaw Ltd.
White & Son Ltd.
W. G. Gosling.
The Port of Hull, London and N.E. Railway. Rep., Major H. S. Cole, c/o Burns, Philip & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
MacGeorge & Jardine.
Woodall & Co.
Liverpool Fruit Brokers.
Johnson, T. S., & Co.

Bristol and Southampton:
Bristol Fruit Brokers Ltd.

Cardiff, Belfast and Dublin:
Connelly, Shaw Ltd.

Glasgow:
Russell, Turnbull & Co.

FRANCE.

Scheiber, E., Paris.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Algemeene Vruchten. Import Maatschappy (also Cologne).
Astheimer, P. H., & Son, Fruchthof.
Heinz-Tiencken.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof. Reps., J. B. Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

HOLLAND.

Amsterdam and Rotterdam:
Algemeene Vruchten Import, Maatschappy.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.
Kobenhaons Fugtauktioner.

MELBOURNE WHOLESALE FRUIT TRADE.

Report for the Week Ended January 31, 1931.

The months of December and January will long be remembered in the fruit trade of Victoria as the worst in the history of the business. During December and over the Christmas holidays Peaches arrived in thousands of cases. The wastage was enormous, due to the prevalence of brown rot and transit rot. Cases of Peaches arriving in the morning with perhaps only one Peach affected would result in the whole of the case being affected by evening the same day. Thousands of cases had to be thrown into the tip. The losses to the grower were considerable. Retailers also suffered heavily, as fruit bought by them one day would be absolutely rotten by the next day. As a result, buyers reduced their purchases by more than 60 per cent. as compared with their purchases if times had been normal. Added to this has been the reduction in the purchasing power of the public, plus the irregular and unseasonable weather which has been experienced. It is claimed that the quantity of fruit on the market during January has not been as considerable as in previous years, but the slow sales and poor demand by the public have given this impression. As a matter of fact, growers' agents were busy with long-distance calls and telegrams requesting growers not to forward consignments of Peaches.

At the present time there are very few arrivals of Peaches. They are bringing 3/- to 5/- a case. Some special lines 6/-. Yellow flesh Peaches have also started to come forward, but as there is absolutely no demand agents do not feel inclined to ask growers for further consignments.

Apricots have practically finished, but the same position has applied to a large extent as with Peaches.

Williams Pears are now coming on to the market. Good quality fruit is bringing 3/- and 4/- a case; some 5/-. Medium and inferior fruit no sale at all.

A wind storm recently took 10 per cent. of the crop in the Northern Victorian districts. In addition, fair quantities are being exported. It is expected that Shepparton will export 30,000 cases of Williams Pears to England this season. This, it is anticipated, will help the market. There does not, however, seem any possibility of prices increasing to any extent, as the general opinion is that immediately prices are raised buyers refrain from purchasing. It is hoped, however, that conditions will be better than last year, when large quantities were wasted.

The same depressing conditions are existing in connection with Bananas and Pineapples. In regard to **Bananas**, buyers are asking for smaller Bananas in accordance with the demand from the public. It seems that the desire is to get more fruit. The result has been that bigger sizes have had to be brought down in price to the same price ruling for smaller-sized Bananas. For instance, size number 9, normally brought 20/- per case; number 8, 18/-; number 7, 10/- to 12/-. In order to make sales, it has been necessary to group 9, 8 and 7 together, and the ruling prices for all sizes at this date is around 10/- to 12/- per case.

Pineapples.—Prices for Pineapples are also down to a very low level, around 6/- to 9/- double case. Odd lots have brought 10/- per case. When it is realised that it costs approximately 8/- to 8/6 to land a case of Pineapples on the Melbourne market, sales at the prices realised above show an absolute loss to the grower.

A peculiar feature at the present time is the large quantities of Valencia Oranges which are reaching the market. Although the sugar content of the Orange is still there, the skin in many cases has changed back to a greenish color. The result is that buyers will not operate, and the ruling prices, 7/- to 10/-, per case, are considerably below those ruling at this time last year.

Lemons are realising 6/- to 10/- per case. Grapes have just commenced. Whilst some varieties are not up to their proper sweetness, varieties such as Raisin de Dames, Muscats, Walthams, are realising 7/- to 10/- per case.

Tomatoes are not keeping as well as in previous years. Prices realised are 2/- to 5/- a case. Special lines slightly higher. The warm weather prevailing in the last week of January has slightly increased sales, but prices are not expected to advance.

Victoria.

Melbourne (29/1/31).—The following prices are supplied by the Wholesale Fruit Merchants' Association of Victoria:—Bananas, green, Queensland, 9's and 8's, 12/- to 13/-, a few 14/-; 7's, 10/- to 12/-; 6's, 8/- to 10/- per double case; selected lines for country trade higher. Grapes: Raisin de Dames, to 10/- per case; others, 6/- to 8/-. Lemons, 6/- to 10/- per case; special higher. Pineapples, 6/- to 9/- double case. Passionfruit, 8/- to 10/-; some specials higher per case. Peaches, white flesh, 3/- to 5/-; specials, to 6/-; yellow, no demand. Pears, 3/- to 4/-; few 5/-. Plums, 1/- to 2/- per case; hardly any demand. Nectarines, bulk, 3/- to 5/- per case; special lines higher. Tomatoes, 2/- to 5/-; few extra specials higher. Valencias, 6/- to 9/-; few specials higher.

The Melbourne manager of the Federal Citrus Council of Australia reports that sales were as follow:—Lemons, Standard, 180-248, sound lines, 9/- to 11/-; a few specials higher; small, marked or large, 6/- to 8/-; faulty and wasty lines lower. Valencias, average standard grade, 96-112, 154-182, 7/-; 126-140, 8/-; with odd sales to 9/-; small, 6/-; few selected lines, to 12/- and 13/-, best counts. Grapefruit, plains, to 10/-; standard, 16/-, best counts; few selected lines, 17/- to 24/-, according to count; faulty lines lower.

New South Wales.

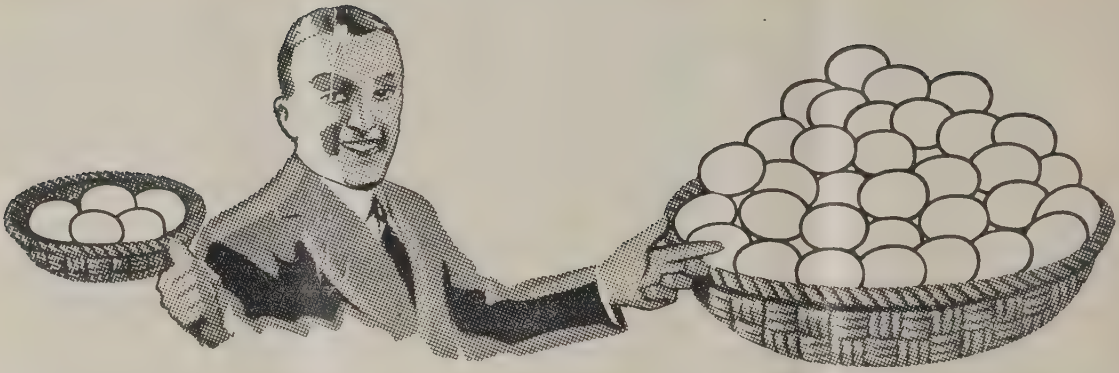
Sydney (27/1/31).—The market representative of the Fruitgrowers' Federation of N.S.W., reports prices as follows for average quality fruit in sound condition. Apples—Local, dessert 4/- to 12/-, cookers 4/- to 9/-, G.S. 5/- to 9/-. Demand firm for good quality fruit. Supplies increasing, a tendency for prices to fall. Bananas.—9's 14/- to 16/- per tropical case (few to 18/-), 8's 12/- to 13/-, 7's 9/- to 11/-, 6's 6/- to 8/-. Demand weak, with market over-supplied. Prices quoted are for genuine grades (green): ripe and inferior fruit lower. Grapes.—Black Muscats, 7/- to 14/-; Hamburg, 5/- to 10/-; Whites, 5/- to 6/-. Demand steady: prices 2/- below last week, with indications of a further fall. Lemons.—Coastal 5/- to 10/- (bushel), M.I.A. 6/- to 11/-, Cured 6/- to 12/-. Demand firm for good fruit, but inferior and rough unsaleable. Most of the cured Lemons not attractive and are keeping badly. Oranges.—Navels 12/- to 16/-, Val. 6/- to 10/- (some special to 13/-). Demand for special fruit for shipping good; retail trade was fair. Large fruit of sizes, 113s down brought low values. Nectarines.—Local 4/- to 8/- per box, few special 9/-; Vict., 6/- to 10/- per bushel, few special to 12/-. Strong demand for local fruit, supplies of which were light. Passionfruit.—3/- to 7/- per box. Improved demand. Peaches.—Local 2/- to 6/- per box, M.I.A. 2/6 to 4/-, Vict. 4/- to 6/- per bushel, few to 10/-. Demand was quiet except for special fruit, which sold well. Elbertas in heavy supply and sold at low rates. Pears.—Local Williams 5/- to 8/- (bushel); Vict. 4/- to 6/-. Most Pears too green and failing to ripen well: the market weakened. Plums.—Local 2/- to 8/- per box; Vict. 4/- to 9/- per bushel. Good demand for special fruit for shipping, but small sizes hard to move even at low prices. Prunes.—Local 3/- to 5/- per box; Vict. 4/- to 7/- per bushel. Demand limited. Pineapples.—7/- to 11/- per tropical case, few to 12/-. Weaker demand with slight fall in price.

Western Australia.

Perth (20/1/31).—Apples, flats, 5/- to 11/-, specials ranging to 13/6 and inferior from 2/6; dumps fetched about 7/- to 14/-. Citrus.—Oranges, plain, flats, 3/- to 6/6 (special to 8/6), dumps 3/- to 9/6 (inferior from 1/-); Oranges, flats, 4/- to 9/-. Stone Fruit.—Plums, Shiro, flats 3/- to 9/-; Santa Rosa, 4/- to 13/6; Satsuma, 6/- to 13/- (others from 4/6); Wickson, 5/6 to 13/- (others from 3/-); Burbank, 3/- to 10/- (special to 13/6); other varieties, 3/- to 12/6; Peaches, 10/- to 20/- (others, including small and over-ripe, from 5/-); Apricots, 7/- to 15/- others from 5/-); Nectarines, 8/- to 18/-; Grapes, open, white 4/- to 7/- (Muscats to 12/6), colored 5/- to 15/- (including Black Muscats), closed 3/- to 5/-; Passion, 5/- to 8/6 (inferior, including shrivelled, from 3/-); Strawberries, 9/- to 13/- per dozen punnets.

Tasmania.

Hobart (24/1/31).—Apples, Beauty of Bath, 2/6 to 5/-; Grav., choice colored 5/6 to 9/-, green and medium quality 2/6 to 5/-; Mobb's Codlins, 3/- to 4/-; P.A., 3/6 to 4/6; Alf., 4/-; mixed varieties, 2/6 to 3/6 per case; Peaches, 4/6 to 6/- per half-case; Cherries, choice, 16/- to 20/- per half-case; med. quality, 8/3 to 12/9 per half-case; Pears (small), 2/6 to 3/6 per case; W.B.C. (imported), 10/- to 11/- case; Plums (dark), 1/- to 3/6 per case, (light), 2/- to 3/6; Greengages, 2/- to 4/- per case; Apricots, good quality 4/- to 5/6 per bush., small and med. quality 2/3 to 3/6 per case; Tas. Tomatoes, best lots 7/6 to 11/- per half-case, medium and on green side 5/- to 7/- per half-case; Vic. Tomatoes, good, firm, colored, 10/- to 12/- case; over-ripe and wasty, 4/- to 8/- case.



ONE TABLESPOONFUL OF KARSWOOD

in the mash is enough for 20 birds, but if fed regularly it means at least

ONE EXTRA EGG PER HEN PER WEEK

Do not imagine that Karswood Poultry Spice is a food. It is nothing of the sort. It is a tonic, and only a very little—one tablespoonful to every twenty birds—is needed to get them into the perfect health upon which a prolific egg output depends. The cost of that tablespoonful for 20 birds is infinitesimal. In fact, a 1/- packet will supply 20 birds for 16 days. Test it yourself. Go to your local grocer, storekeeper or produce dealer; buy a packet, then give it to half-a-dozen of your birds in accordance with the directions on the packet. Do not expect immediate results, for Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure. By feeding Karswood, you should get at least one extra egg per hen per week.

9 Eggs a Day from 12 Fowls in Winter Time

Dear Sir,

I have much pleasure in informing you that there is a very great improvement in my egg returns since using Karswood Poultry Spice. I have only 12 pullets (my yard being too small to keep any more), and before using your Karswood Poultry Spice I was only getting 5 and 6 eggs per day. I commenced using your Spice on the 25th June, 1929 and from the 1st July up to-day, 27 July, 1929, I have collected 243 eggs, an average of 9 eggs per day, Winter laying. (The price of eggs at present is 2/5 per dozen). Not too bad is it? And speaks well for your wonderful Karswood Poultry Spice. I have spoken to several of my friends about it and they are giving it a trial I am still keeping further records of the daily return of eggs. The fowls I have are Black Orpingtons, September (late) hatch.

Yours faithfully,
(*Sgd.*) *VINCENT L. CRANNEY*
27/7/29 47 *Esher St., Burwood.*

7 Eggs a Day from 8 Fowls

Dear Sir,

I have been using Karswood Spice for several years, with excellent results. I have only 8 fowls, but have been getting on an average 6 and 7 eggs a day for some time, which is satisfactory, don't you think?

(*Sgd.*) *VICTOR POWELL,*
54 *Shipsters Rd., Kensington, S.A.*

"Beneficial for Egg Production"

Dear Sir,

I may state I've used "Karswood" for a number of years, both for my utility and exhibition stock. Not only is it beneficial for egg production, but it gives the plumage wonderful lustre when preparing birds for the show bench.

6/5/29 (*Sgd.*) *C. J. U.*
Original letter on file for inspection.

100 per cent. Egg Production

I am only a new chum in the game, but since I started with chooks I have used your wonderful spice. I have one pen of 6 pullets and rooster and I think the results (which I attribute to your Spice) are phenomenal. I have had 5 eggs for four days and 4 eggs for three days, that making one week, and to-day I have received 6 eggs from 6 pullets, this for the first time being 100 per cent. This average has been going on since the beginning of March. You may use this letter or any part of it as you wish.

(*Sgd.*) *S. HOLDEN,* 7 *Short St.*
4/5/29 *Gladesville.*

"Of Great Value to the Fowls"

"I think Karswood is of great value to the fowls. They always seem to be in good trim when fed on it. I never lose any fowls through any sickness whatever, and always get a good percentage of eggs."

(*Sgd.*) *H. H. BISHOP,*
9/6/29. *Koorawatha.*

From 1 Egg a Day to 8 Eggs a Day

I have much pleasure in informing you that I was only getting about 1 or 2 eggs a day from eight hens, but, since using Karswood Poultry Spice, I have been getting eight eggs per day and the chickens and ducks are growing wonderfully. I will recommend it to anyone."

(*Sgd.*) *MRS. MACDONALD,*
Euccrabendinni E.,
23/10/29 *Bowraville, N.S.W.*

Supplies

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½lb. packet, 1/-; 1lb. packet, 2/-; 7lb. tin, 13/-; 14lb. tin, 25/- 28lb. tin, 48/-

KARSWOOD POULTRY SPICE

Increases egg-production without forcing, because it contains ground insects but no cayenne pepper, etc.

4.M.30

Poultry Notes.

SAVING STUD COCKERELS.

Where cockerels will be required for breeding purposes next season, they should be reserved out of the batches of chickens hatched before September so that they will be at least ten months old by the next breeding season. The mistake is often made of marketing the early cockerels when prices are high and depending upon the later ones for stud purposes. This results in having some immature and poorly developed birds to select from.

Another matter which should be kept in mind is that about three times the number of birds that are ultimately required should be retained to choose from, because many of the cockerels that at first appear promising will develop faults as they grow older and will thus have to be rejected. Failure to retain sufficient cockerels is one of the reasons why some farmers have to resort to very inferior males for the breeding pens. It should be realised that the male bird plays a very important part in the quality of the progeny, not only from the breed standard point of view, but also in the maintenance and improvement of egg production. Therefore careful selection of the male is an essential factor in breeding.

A mistake often made by beginners is to reserve for breeders the precocious type of cockerels, which at an early age look "showy" and full of vigor. This type matures too quickly and the birds do not develop sufficiently to make satisfactory breeders. The right birds to retain are those which make good body development, but do not reach the mature stage so quickly. Distinction has, of course, to be made between the well-grown birds referred to and the slow-growing, late-hatched ones, which are too long reaching maturity to be of any use.—"Agricultural Gazette," N.S.W.

ANSWERS TO CORRESPONDENT.

Hatching and Breeding.

Questions:

"Amateur" (Pascoe Vale), writes:

1. In the breeding pen, does it matter if the cock and hens are brother and sisters?

2. How long before the eggs are required to be hatched should the breeding pen be established?

3. Is it possible to get a lamp incubator and brooder with a capacity of less than 80, and how much would they cost? Would you please name a reliable company?

4. Do the incubator and brooder have to be full?

Answers:

1. It is very inadvisable to breed from birds so related. If inbreeding is to be followed, it must be done in accordance with a line breeding chart. The first mating in connection with this system would be to mate the pullets back with the parent male and the cockerels back with the parent female. Unless you are experienced, however, in the system of line breeding, it would be safer to breed from unrelated stock.

2. It is advisable to mate up a breeding pen at least a fortnight before eggs are required for hatching. The time for fertility to be established varies with the class of stock and the number of females in the pen. A fortnight, however, should be a safe margin, and allow sufficient time for the birds to settle down after being mated.

3. Yes, such can be obtained, and we would advise you to get in touch with one of the poultry supply firms whose advertisements appear in "The Poultry World."

4. There is no necessity to fill an incubator or brooder. In fact, with brooders it is generally better not to fill them to capacity, as a brooder advertised to hold 100 chicks a day old will often prove too small to accommodate that number of chicks up to the time they are ready to leave the brooder.

BENEFITS OF COD LIVER OIL.

At this time, when some poultrykeepers are seeing their whole flocks wiped out with disease and others are in fear it may be their turn next, it might not be out of place to again draw attention to that age-old homely tonic—cod liver oil.

In the "British Medical Journal" of October, 1928, there is an article by Dr. H. N. Green (M.D., Ch.B., M.Sc.), and Dr. E. Mellanby (M.D., F.R.C.P., F.R.S.), describing experiments on rats to prove the anti-infective action of vitamin A, of which the richest natural source is cod liver oil. In the summary, the article states:—

"In an extensive study of animals brought upon a diet deficient in vitamin A, it is shown that practically all die with some infective or pyogenic lesions. In the control animals receiving vitamin A, these lesions are absent."

Another article by the same writers in the "British Medical Journal" of June 1, 1929, deals with observations made of the effect of vitamin A on human beings. The article states, in referring to the results of the observations:—

"They do, however, warrant the belief that the animal experiments pointed correctly to the hypothesis that vitamin A plays a part as an anti-infective agent to bacterial infection. The fact observed above that the administration of these preparations does not produce immediate beneficial effect and this only becomes obvious after a week or a fortnight, according to the severity of the case, from the beginning of the treatment."

It cannot be stated that cod liver oil will cure "Newcastle" disease, but there is no doubt that the anti-infective action of cod liver oil will render birds fed with it less liable to infection. It is a tonic, a health promoter and a body builder, and is well worth using; but those who use it would be wise to use only the best, which, as in most things, is the cheapest in the long run.

RETAIL FRUITERERS' ASSOCIATION.

THE monthly meeting of the Executive of the Melbourne and Metropolitan Retail Fruiterers' Association was held at Melbourne on January 8, there being a large attendance of delegates.

Short Weight.—Delegates reported that with regard to the goods sold in the Victoria Market short weight was very noticeable, many of the packages being considerably under the weight they were supposed to contain. Bags of beans contained 43 instead of 50 lbs. Pears were also light, and the same applied to buckets of berry fruits.

In view of the seriousness of the position the opinion was expressed that unless some improvement is made the Association would be forced to take action to compel the authorities to deal with this matter. It was pointed out that 7 lbs. shortage in a bag of beans meant that very often the retailer had to sell the goods without any profit whatever.

COMMENTS ON THE RETAIL TRADE.

Business in the retail trade is not showing much improvement for this time of the year. Owing to the general depression, shopkeepers did not expect to do the same as in other years during the holidays, but they were still more disappointed when the weather turned out so unfavorable at that period.

Complaints are general that although fruit is cheap, and very plentiful, suitable for jam-making, very few householders are taking advantage of the opportunity, no doubt the high price of sugar is also greatly to blame.

Retail fruiterers are still looking forward to a spell of dry warm weather which they hope will come shortly and possibly minimise the great waste that has been so prevalent this year in all soft fruits. The prevailing cool weather is also against the sale of Tomatoes and other salads, as well as fruit.

EDW. W. THOMPSON.
Secretary Melbourne and Metropolitan Retail
Fruiterers' Association, 14/1/31.

South Australia.

Adelaide (24/1/31).—Apples (eating), 6/- to 7/- case; do. (cooking), 6/- to 7/- case; Apricots, 9/- case; Bananas, 26/- crate; Figs, 10/- case; Grapes (dark) 8/ - case; do. (white), 8/- case; Lemons, 14/- to 15/- case; Nectarines, 3/- case; Oranges (common), 8/- to 10/- case; do. (navels), 13/- case; Peaches, 6/- to 7/- case; Pears (eating), 4/- to 5/- case; do. (cooking), 4/- case; Pineapples, 16/- case; Plums (light), 4/- to 5/- case; do. (Damson), 7/- case; do. (Jap.), 6/- to 7/- case.

LIME Will Sweeten the Soil and Increase Your Yield

Sour soil means small returns. Results have proved that "Bull-dog" Lime will turn unprofitable land into a paying proposition. Crops and pastures will not thrive where soil is deficient in lime. This fact is becoming more appreciated by Farmers and others who use

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Supplied in Burnt (Cal. hydrate) and Unburnt (Cal. carbonate).
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"BULLDOG" COMPO

A ready-mixed dry concrete containing the correct proportions of clean sand, cement and "Bulldog" hydrated lime and requiring only the addition of water. Packed in 140 lb. bags, measuring approximately 1½ cubic feet.

Builders' Lime, Hydrated Lime ("Hylime"), Cement and Builders' Hardware.

T. CURPHEY PTY. LTD.
344 SWAN STREET, RICHMOND, E.1, Victoria.

L. P. Rosen & Son, Fernhill Nurseries

Are now booking orders for all kinds of Fruit Trees, including Citrus, of which 100,000 are available, including some 15,000 Valencias and 5,000 Washingtons, grown from buds supplied by the Bud Selection Society.

Catalogues and Quotations Free on Application.

SPECIALTIES—FRUIT TREES, ROSE PLANTS, and KUNDE SECATEURS, Etc.

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-LEMONS-

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"BLACK LEAF 40"
(Nicotine Sulphate)
Distributors
The Producers' Co-operative Distributing Society Ltd.
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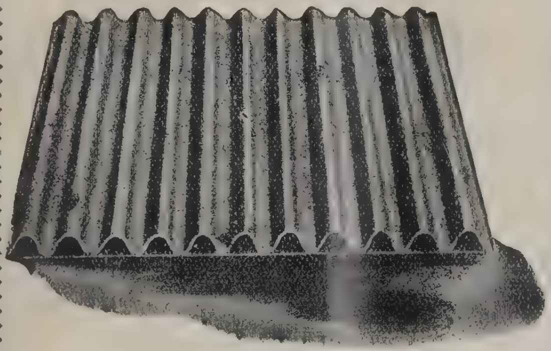
Etc.



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for

Apple Case Linings

are a proven preventative of

BRUISED FRUIT

Years of study in the packing of Fruit and Fruit Products aided by modern and accurate mechanical equipment produces corrugations of uniform strength and resilience, ensuring a safe and clean pack at a low cost.

The first glance at your Product by a purchaser when so packed ensures a better price.

Full Particulars on application to:—

J. FIELDING & Co. Ltd.
Buckingham and Chalmers Streets,
SYDNEY - - N.S.W.

EXPERIMENTS IN FRUIT SETTING OF APPLE.

During the past two years experiments have been carried out in Otago, N.Z., by the Horticulture Division with the object of determining the treatment which would cause strong-growing Delicious Apple trees on rich alluvial soil to set their fruit satisfactorily. Several series of tests—manurial and pruning—were carried out.

Reporting on the work, Mr. W. K. Dallas states that the treatment which gave the best results was a normal pruning, combined with the application of sulphate of potash at the rate of 2lbs. per tree in the month of August in each of the two years. The trees set a crop which averaged 14 loose petrol cases per tree, as compared with an average of five loose cases in the other plots. The pruning consisted of a judicious cutting out of leaders where it was considered that there were too many in the trees, with the object of allowing more sunlight into the centre. The lateral growth was thinned out, and the remaining laterals shortened back from 14in. to 18in. in length.—(From "New Zealand Journal of Agriculture," August, 1930.)

MARKETING PRODUCE IN SOUTH AUSTRALIA.

"Should growers market their own produce?" formed the subject of a debate at the Lenswood and Forest Range branch of the Agricultural Bureau of South Australia recently.

Mr. J. Vickers, opening the debate for the affirmative, said that since time immemorial the market place had been the centre of exchange of primary produce. Market day had been looked upon as the day of the week when everybody was in town, and that mode of marketing was still in vogue to-day, because it contained advantages which could not be had by any other method. With marketing one's own produce the personal touch was acquired between the grower and the buyer, and buyers as a rule preferred that, as they were surer of what they were buying. Co-operative methods and concerns had from time to time been started, but he considered that costs in general, especially labor, were too high in Australia for that form of marketing. When the marketing was left more to the grower he could do the work more cheaply than when left to others who had little or no interest in making things pay. He thought their produce was not adaptable for auction marketing, as there were too many different grades, sizes, etc., which could not be judged by the appearance of the top. Supply and demand ruled every market, and the present practice was the best method of allowing the former to operate.

Mr. W. J. Bishop took the opposing side. He said the present system was entirely out of date. He spoke against auction marketing because of the danger of collusion, and that would mean that goods would go for the lowest bid. He suggested a scheme of selling through commission agents and keeping it co-operative. By that means a trained salesman would be selling instead of gardeners, who often knew little of the ethics of salesmanship. It would mean that pressure would be necessary to get the growers to act unanimously, when they could sell through an organised channel, demand a price instead of the buyer as at present quoting his. Other members also spoke, and considered that the proposed scheme was worthy of consideration.—"S.A. Journal of Agriculture."

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(8) The way to develop new markets is to concentrate on those British outports which are earnestly striving to increase their trade in fruit with Australia.

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A card of greeting has been received by the "Fruit World" from Mr. F. Larder and staff (London and North-Eastern Railway).

The Victorian Fruit Marketing Association is in receipt of an appreciative lettergram from the South Australian Fruit Marketing Association, conveying the season's greetings.

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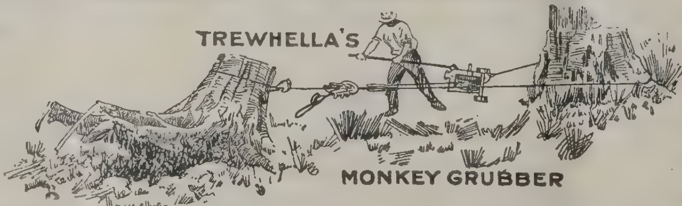

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With few exceptions, the average prices realised at Manchester for Australian and Tasmanian Apples are higher than at any other British port; price records extracted from the Weekly Market Reports (issued by British Ministry of Agriculture), as also addresses of Manchester fruit brokers and merchants, and all other information re port and selling charges, etc., will be supplied on application to:—

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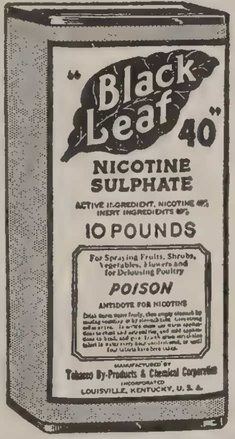
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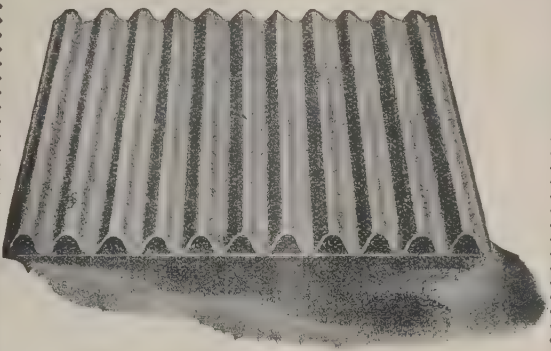

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Show Outstanding Success of

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See July 1930 Issue of the Victorian "Journal of Agriculture"

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ADVERTISING AUSTRALIA.

Activity of National Travel Association.

THE ATTRACTIONS OF AUSTRALIA from a tourist point of view were nicely demonstrated at the Australian National Travel Association's publicity display at the Melbourne Town Hall from February 2 to 6.

The display was opened by the Lord Mayor (Cr. Luxton, M.L.A.). There were numerous posters and photographs showing Australia's scenic beauties and industrial development, also pictures of native fauna and flora. The latter included Australian native flowers, such as Tetratheca hirsuta, Didiscus coeruleus (Blue Lace Flower), Clianthus speciosus (Sturt's Pea), Boronia heterophylla, Hibiscus Heugelii, Nuytsia floribunda (Yellow Christmas Bush, W.A.). The pictures of the quaint Kangaroo Paw plants were particularly good—Anigozanthus Manglesii (red) and A. viridis (green).

The display demonstrated in a comprehensive manner what is being done in other parts of the world to make Australia known from a tourist point of view.

The National Travel Association welcomes contributions from business houses to carry on its valuable work. The director is Mr. C. H. Holmes, 435a Collins-street, Melbourne. Overseas representatives are Mr. Fenton, Grand Buildings, Trafalgar Square, London, W.C.2; Mr. A. H. O'Connor, 114 Sansome-street, San Francisco, Cal., U.S.A. Valuable publicity work on behalf of Australia is being conducted.

THE EARTHQUAKE IN NEW ZEALAND.

Profound sympathy is expressed with New Zealand in connection with the recent disastrous earthquake, when Napier and Hastings suffered great loss of life and property.

CANNED FRUIT EXPORT.

Stocks in Great Britain Cleared.

In reply to a question, the acting Secretary of the Canned Fruits Control Board (Mr. W. J. Adams) advises under date February 27, that the arrivals of 1930 season's canned Apricots, Peaches and Pears in Great Britain to 21/2/31 were 542,589 cases, of which quantity, 493,742 cases had been sold on that date. It is anticipated that the unsold balance will be cleared at a very early date.

Dried Fruits Control Board.—Growers' representatives on the Dried Fruits Export Control Board, were recently elected as follows:—Messrs. H. D. Howie (S. Aust.), A. L. Johnstone and P. Malloch (Victoria), A. Yeates (W. Aust.), L. McLeod (N.S.W.).

Mildura Dried Fruits' Association.—Mr. E. J. Roberts presiding at the annual meeting on January 31, said the dried fruit sales in Australia had increased from 7,488 tons in 1924, to 11,685 tons in 1929, proving the value of the A.D.F.A. As the present season would be lighter than usual, growers should concentrate on quality production. The world's Sultana position had improved, owing to lessened production in California and Smyrna.

Mr. H. D. Howie, Chairman of the A.D.F.A. Board of Management, gave an important address at a meeting of growers at Red Cliffs on February 6. Mr. Howie referred to the settlement with the N.S.W. growers, a costly fight, but settled on the recognition of equality of sacrifice. The carry-over was not so great as had been expected; growers were getting the benefit of the high exchange rates. Mr. Howie answered many questions, and was cordially thanked.

GOULBURN VALLEY PEAR EXPORT.

Appreciation is expressed in the Goulburn Valley because of the good services of the Department of Agriculture in assisting with arrangements for Pear export. The packing instructors—Messrs. B. Krone and W. K. Harris—assisted capably and untiringly.

Mr. W. Gregory, of the Gerrard Wire Tying Co., and previously on the packing instruction staff of the Department, also rendered valuable service.

The value of the packing classes conducted by the Department of Agriculture was clearly seen when girls trained in these packing classes were noted to be thoroughly efficient when handling the rush of the Goulburn Valley Pear export pack. These girls came from Somerville, Ringwood, Pakenham and other southern districts.

Mr. J. M. Ward (Superintendent of Horticulture), who personally supervised much of the export pack, states that the quality is excellent. Every care was taken with packing, pre-cooling and transport, and the outturn in British markets will be awaited with the keenest interest.

Compulsory Pools.

ILLEGAL IN CANADA.

Far-reaching Judgment.

Fruit Marketing Legislation Swept Away.

OTTAWA, February 16.

COMPULSORY MARKETING POOLS were declared illegal in a sweeping judgment written personally by the Canadian Chief Justice (Mr. Lyman Duff), who is at present Acting Governor-General, cables the "Herald" special representative.

The broad principles laid down by the Chief Justice were:—

There can be no compulsory wheat pool in Canada.

No group or pool of producers can force other growers to join against their will.

A levy cannot be imposed in any industry like the production of fruit, milk or wheat for the purpose of controlling the marketing of that product.

The judgment swept away British Columbia's special marketing legislation relating to fruit and milk, which had been approved by the Court of the province of British Columbia.

It was of intense interest throughout Canada, because it settles the law definitely against compulsory marketing pools.

Any forcible levy in any industry designed for marketing control is illegal because it is indirect taxation, and no province in Canada can fix the prices of fruit or other commodities for sale beyond the boundaries of that province.

VICTORIAN FRUIT EXPORT.

Over Half a Million Cases.

The export of fruit from Victoria in the present season is estimated by the Superintendent of Horticulture (Mr. Ward), as follows:—Apples, between 360,000 and 400,000 cases; Pears 160,000 cases.

CINCTURING THE CURRANT VINE.

Can you advise me of the early history of the introduction of cincturing the Currant vine, and the correct method of doing the work? P.H.Q., Clare, S.A., asks.

Reply.—The practice—which is age old in Greece—was introduced here by the late W. C. Grasby, who visited Greece about the latter end of the nineties of last century. The accepted practice is to remove a very narrow ring of bark—1/12th of an inch wide is enough—right into the sapwood layer. It is done with the best effect when the corollas—green star-shaped caps—are falling from the flowers very freely. The action on the plant is a temporary check to the returning elaborated sap, owing to the part severance and exposure to the air of the sap vessels through which this descends. The crude sap ascends to the leaves through vessels more deeply situated, and, consequently, that stream is not seriously interfered with by the operation. The narrow cincture is soon filled across with new callus cells, and the normal ascent and descent is gradually restored. In the meantime, the berries become knitted, as it were, to their pedicels, and adhere firmly when growth is resumed.—"South Australian Journal of Agriculture."

PASSION FRUIT CULTURE.

Autumn Saved Seed Best For Seedlings.

Export Trade Possibilities.

THE PASSION FRUIT is grown freely in all the Australian States. The fruit has a pleasantly distinctive flavor, being keenly relished, particularly by visitors from England and America.

Apart from supplying the Australian market, growers are now considering export, along the lines suggested by Mr. G. B. Tindale, in the last issue of the "Fruit World."

Mr. H. W. Davey, Chief Orchard Supervisor, has an interesting article on Passion Fruit culture in the "Victorian Journal of Agriculture." Here are a few of the items selected from the article.

A return issued by the Government Statist for the season 1928-29, shows that there were at that time in Victoria 411,502 Passion vines in bearing, and 154,650 non-bearing, making a total of 566,152 Passion vines growing in this State. In the previous season, 1927-28, 22,072 bushels of this fruit were harvested.

The variety of Passion Fruit most commonly grown in Victoria is "Passiflora edulis. This is the commercial variety. The second variety, but of much less importance here, is the P. edulis yellow, a variegated form of edulis, the fruit having a yellow skin. The Mammoth Passion, which appears to have been evolved from the type species edulis, derives its name from its larger fruits, but the greater size of these is largely discounted by its frequently becoming shy in bearing as the vines become older. It is doubtful, therefore, whether it will prove to be any more profitable than the common black Passion Fruit. P. lingularis, from Mexico, is said to bear the best fruit of any of the genus Passiflora, but this species is not grown commercially in Victoria.

The Passion vine is native to Southern Brazil, and does best in a warm, humid atmosphere. The vines are gross feeders, and care must be taken to keep the land in a high state of fertility. This may be accomplished by liberal applications of stable manure, but, failing a supply of this, dependence must be placed on green crops, together with artificial manures. A green manure crop, besides adding all the elements of plant food, keeps the land supplied with humus, which greatly improves the physical condition of the soil and increases its water-holding capacity.

The term "green manure" or "cover crop" is applied to any growth of weeds or crop turned into the soil, when it is in a green condition. The poorer the soil, the greater is the necessity for a green crop, and especially is this the case with light sandy soils. For instance, 100 lb. of sand can hold only 25 lb. of moisture, whereas 100 lb. of humus (decayed vegetation) can hold nearly double its own weight of water.

Sow Cover Crops Now.

A suitable green crop for Passions may be obtained by sowing 1 bushel of tick beans and ½ bushel of peas to the acre. A mixture of superphosphate and bone fertiliser should be applied at the rate of 3 cwt. per acre to ensure good growth. If the ground is very deficient in humus two bushels of tick beans and one bushel of rye may be sown instead of the above. Where legumes are used for the green crop they should be ploughed under at the flowering stage, as it is at this time that the maximum fixation of nitrogen is reached. The crop also is soft then, so making for rapid decomposition. In addition to the manures previously mentioned, ½ ton of agricultural lime to the acre will prove of great benefit to the vines.

Raising Seedlings.

By raising one's own plants the damage incidental to transit over long distances is avoided. But of even greater importance is the fact that this enables growers to know something of the character of the vines from which the seed was selected.

In choosing fruits for seed purposes, it is important to select fruits only from vines that have proved themselves to be good bearers of high quality fruits, together with a minimum of light weights. The latter are fruits that do not develop seed and pulp normally, and are therefore useless.

Seed from selected fruits ripening from April to June is recommended, as such seed appears to possess greater viability than that taken from the fruits ripening earlier in the year.

Passions for seed purposes should be allowed to remain on the vines until fully matured. The fruits are afterwards allowed to wilt and become more or less dry, when they can be stored until the time for sowing arrives. Alternatively, the seed may be cleaned immediately with dry fine soil or sand. These latter absorb the moisture of the pulp, leaving the seeds bright and clean.

A two-year-old Mammoth Passion vine.

(Illustration by courtesy "Journal of Agriculture," Vic.)

After having been cleaned the seeds may be sown either in boxes or drilled into a seed bed. It is important, and especially so in the latter case, to see that the soil is free from weeds before the seed is sown, otherwise constant weeding and unnecessary labor will be necessary, besides incurring the risk of injury to the seedlings during the weeding operations.

The best time to sow Passions seed is during the spring months, from about the end of September to early in November.

THE AUSTRALIAN CITRUS INDUSTRY.

Report of Murray Valley Development Committee.

(Continued from February "Fruit World," p. 96.)

In the case of Grapefruit, which to date has not been extensively grown in Australia, there is reason to believe that the planting of an additional area in the vicinity of 800 acres could be safely recommended.

Australia's average imports of citrus during the five years ended 1928-29 were negligible in comparison with production, of which they represented only 20,956 bushels, or .5 per cent.

Over the same period exports, which fluctuated widely from year to year, averaged 144,862 bushels, or 3.7 per cent. of production.

The problem of appreciably increasing our export trade in citrus, upon which the future expansion of the industry would seem to almost entirely depend, is a difficult one. New Zealand is at present our only real outlet, but the capacity of that market is not large, as it has been previously shown that the greater portion of her supplies are obtained from the Cook Islands (New Zealand mandated territory), and that even if Australia supplied the Dominion's total citrus imports, no substantial relief would be afforded the pressure on the home market.

The United Kingdom is the world's largest importer of citrus, the greater proportion of her supplies being obtained during the winter months from Spain, Italy, and Palestine, and in the summer months from South Africa, California, Florida, and South America, during which period Australian shipments, if forwarded, would arrive. Past experience has, however, shown that

unless adequate shipping facilities

are provided, and satisfactory methods devised in regard to handling and packing in order to ensure the preservation of the fruit during transit, the prospects of Australian citrus being landed in London in a wholesome and attractive condition are not bright. Potentially the United Kingdom market is, perhaps, the most important one so far as the disposal of our surplus citrus production is concerned, but until it can be demonstrated by experimental shipment on a commercial basis that the fruit can be sold there in competition with the citrus of other countries, any further expansion of the industry with the object of securing a portion of that market should not be entertained.

The time is, however, rapidly approaching when even from present plantings a large surplus for export will materialise, and it is important therefore, that early action should be taken by the industry, assisted wherever practicable by Government aid in the direction of continuing

the scientific research

into the problems associated with transport, and in the direction of ascertaining the necessities of markets in the way of quality and demand during most favorable months of Australian supply, to make a series of trial shipments with a view to overcoming the difficulties that existed during the period 1921 to 1925, when, owing to a high percentage of wastage and other causes, export to the United Kingdom, with few exceptions, was found to be unprofitable.

Exports to Canada.

Until this season, when 40,000 cases were forwarded, Australian citrus exports to Canada were negligible. During the five years ended March 31, 1930, Canada's imports of Oranges averaged 2,358,498 boxes, 94 per cent. of which were supplied by the United States of America. Of Lemons 368,403 cases were imported, mainly from the United States and from Italy, the percentages being 70 per cent. and 28 per cent. respectively. The United States has the advantage of being able to place supplies on the Canadian market all the year round, and if we are to secure a portion of that market it will be necessary for us to forward continuous supplies over as long a period as possible.

It is too early to say whether Australia can compete successfully against her American competitors on a price for price basis in respect of the Canadian trade, but the financial results of this season's consignments will be awaited with interest.

It is pertinent to suggest, however, that much good would accrue to the industry if growers were able to continue the shipments that have been commenced, even though the net realisations per case are less than those obtainable on the local market. Action in this direction may only be successfully accomplished by effective organisation within the industry, which comment applies equally to any steps that may be taken to extend our citrus trade to other countries.

Individuals should not be expected to pioneer, at a probable loss, new avenues for expanding the industry, which, if successful, would be to the mutual advantage of all growers; yet if some serious endeavor be not made to evolve a sound plan of oversea trade promotion while the time is now opportune, in that the surplus for export is not our immediate problem, it is likely that a very serious position will arise.

The demand for citrus in Eastern countries is comparatively small. The commodity is a relatively high-priced one, and the European population does not consume sufficient to create a large market. Australia has already a small trade with the East, chiefly British Malaya and Netherland East Indies, but it is considered that several years will elapse before those markets will develop into an important outlet for surplus production. It is, therefore, to the United Kingdom and Canadian markets that growers must direct attention if the industry is to progress.

(To be concluded.)

"FRUIT WORLD ANNUAL."

The "Fruit World Annual" for 1931, recently issued, is a valuable production, and contains a comprehensive review of the Australian and New Zealand fruit industries. It is a work of daily reference for commercial orchardists and all interested in the dried, deciduous and citrus fruitgrowing industry. Some of the leading features of the 1931 "Annual" are as follows:—Marketing Australian and New Zealand Fruit; Review of the World's Fruit Industry; Australian and New Zealand Fruit Industry Statistics; Cold Storage in Australia; Jam and Canned Fruit Industry; Standardised Packing and Grading; Seasonable Orchard and Vineyard Work; Control of Insect Pests and Fungoid Diseases; Planting Fruit Trees, etc.

A spray calendar with illustrated charts are also included, also packing charts, lists of cool stores, canning factories, fruitgrowers' associations, etc.

The "Annual" is published by the Fruit World Pty. Ltd., 78a Victoria-street (near Russell-street), Melbourne, the price being 2/- per copy, posted.

Plant Research in U.S.A.

STRAWBERRY BREEDING. (Max B. Hardy and H. D. Locklin, in co-operation with the Western Washington Experiment Station). There are some 150 varieties and hybrid selections of Strawberries in the variety test and breeding plots. One year's records of yield, color, firmness and size of berries, as well as records of various plant characters, have been obtained of about 50 of these. Similar records of the remaining 100 will be obtained in the 1930 season along with additional records of the original fifty.

Fifty-two crosses were made between varieties with contrasting yield, berry color and berry firmness. The F1 and F2 seedlings of these crosses will be studied to determine the mode of inheritance of these characters.

RASPBERRY BREEDING. (Max B. Hardy and H. D. Locklin, in co-operation with the Western Washington Experiment Station). The study of hardiness in red Raspberry canes has been continued. These studies have been conducted under laboratory conditions, and results compared with observations in the field. Based on the results obtained in the winter of 1929, twelve crosses were made, using the five varieties—Cuthbert, King, Marlboro, Latham and Antwerp—varieties varying from very tender to practically complete hardiness under Western Washington conditions. The seedlings of these crosses will be studied for the mode of inheritance of this character of hardiness.

TOMATO BREEDING. (C. L. Vincent). In 1927, crosses were made of the Bonny Best and Sutton's Best of All Tomatoes, two of the leading greenhouse varieties grown in eastern Washington, in order to develop a new variety having the shape and high eating qualities of the Bonny Best and the good shipping qualities of the Sutton.

A number of fairly promising seedlings have been selected from this original cross. To date, thirty-seven promising seedlings have been carried through the F2 generation and six other seedlings through the F3 generation. Further selections will be made from the F2 generation crosses from plantings made in the greenhouse during the fall of 1929 and 1930. A few F3 generation seedlings will be sent to some of the greenhouse men in the State for trial tests.

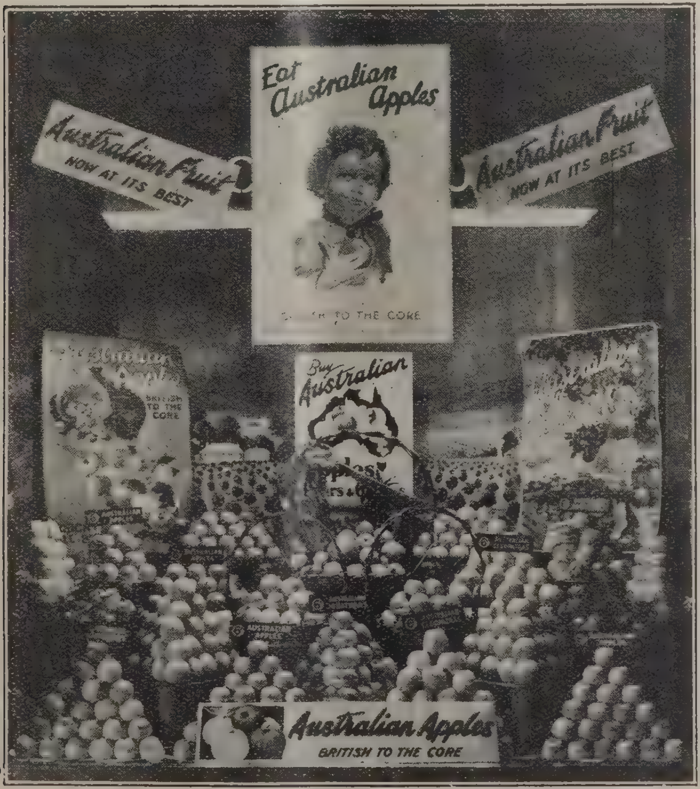
Half-trying is the secret of many a failure.

* * * * *

Boy (at home lessons): "What tense is this, faither—'the farmer drank three tumblers of ale'?" Father: "I wad say his thirst was intense."

* * * * *

When you feel you have done a good day's work, stick it out an hour longer.



Appreciated publicity for Australian Apples in Great Britain.

A Display in a Nottingham Retail Shop.

Why Not Fruit Kings?

A Call to Growers and Distributors to Unite to Proclaim Fruit Best Food.

Man of 63 Rejuvenated—More Physically and Mentally Active Than at 23.

(To the Editor, "Fruit World.")

Sir,—Why not Fruit Kings—as indeed the fruitgrowers of Victoria should be—to whom I send greetings, with the hope that I will succeed in giving them a push towards that desirable goal—instead of being content to be supplicants to the Government of the day, for help. It's only through lack of vision to realise the boundless scope—the limitless opportunities that there are for developing the home output of Nature's most delicious food, that they are in the present unsatisfactory state.

I can visualise to the right—to the left—and all round, countless opportunities waiting for the plucking—for I have proved that "**Fruit is Best Food**" by ten years' experience as a fruitarian—and my object in writing this article is to urge upon the growers and others interested in the fruit trade to wake up to this fact, also "Fruit Best Food" to get the "Idea" focussed in their minds and actively propounded. There are innumerable ways to accomplish this object—then ere long the present output of fruit would barely supply the home market.

We must all admit the incomprehensible fact that in this sunny land—where fruit should be the staple food—the present consumption per head of the population throughout Australia is remarkably small; a large section of the community regard fruit as a luxury to top up with—on a full tummy of all sorts of food. Others never eat fruit. Amongst these are many fruitgrowers—a sorry state of affairs that men privileged to produce the best and most delicious of all foods, should fail to appreciate its goodness.

As one having demonstrated the efficacy of a fruit diet, including nuts, Raisins, etc., I write as one having authority—for one oz. of demonstration is worth a ton of theory, and would ask you to bear with me whilst I briefly outline my experience.

Ill—Then Completely Rejuvenated.

For 52 years I lived on the food that the majority of Britishers live on, i.e., all sorts of flesh food and plenty of it. At 45 I was an old man—at 52 was down and out.

For the last ten years I have cut out all flesh food holus bolus—and live on fruits—with salads, etc. I have been rejuvenated and now at 63 am more physically fit and mentally alert than at 23—and am daily doing feats of endurance—far ahead of any other period of my life, and for ten years I have enjoyed perfect health—in fact, though never previously an athlete, I am now able to run, without feeling the least tired, long distances up to 23 miles without a break, and every morning run seven to eight miles between 5 and 7 a.m., often doing 20 hours physical and mental work in a day.

So the old time idea of meat for strength is exploded.

The fact is—Fruit IS BEST Food—delicious to the palate—cleansing, beautiful to the eye, and when compared with the carcase of a dead pig or bullock—comparisons are indeed odious. And withal it brings a sparkle to the eye and a bloom to the cheek beyond compare, far more effective than lipstick or cosmetic—all men love the natural bloom on the cheek of the fair sex.

Vigorous Campaign Urged.

Let me urge the fruitgrowers—and all interested—to unite as one man—be men—put on the armor of goodwill, and the spirit of activity, determined to practice and preach the gospel of "Fruit Best Food," pledging to eat at least one fruit meal daily. Do it and enjoy it. **Start Now**—no holding back for Government aid, for brighter times, for better weather, for more money. Get a move on now, **for Now is the time, the only time you can control.** Start a crusade and keep going—to educate the community to a realisation of the "Good Idea," fruit Best Food that you are propounding—keep hammering it in—create a fruit consciousness. Tell your story in our schools—screen it on the talkies, proclaim it in the press—on our railway stations—our trams, over the wireless—above all, eat it, talk it, one and all, get your wholesaler, your retailer, the cafe, the fruit shop, the fruit stall, all working for the "Good Idea," and insist that the best fruit and most palatable fruit drinks only are supplied to the public at moderate prices. Learn a lesson from the delightful display of fruit at Spencer-street, and Flinders-street Station, so arranged that people are charmed as by a magnet to eat and drink for beauty and health. Surely an inspiration to an intelligent body of merchants and growers—who are all ready to clap the "Clapp" that has done so much for them—to go and do likewise and be deserving of many claps.

Again, I say go ahead **wholeheartedly** for the good of all, not all for self, but all for all, in helping the community to a better way of living you will help yourselves and will indeed be Fruit Kings—independent of governments and all outside props. The "Fruit World" I am sure would be ready and willing to help—and to show how the work can be carried out without incurring a tremendous outlay, in fact, it could be done for an inconsiderable sum when spread over the output of Victoria. You have a great cause—pack your troubles and sing "Cheerio."—Yours, etc.,

"REJUVENATED."

(The writer of the foregoing article is well known to us. His story of rejuvenation is a fascinating one. If the good news of "**Fruit Best Food,**" could be accepted, there would be indeed a very remarkable increase in fruit consumption, to the benefit of all—the general public, as well as all connected with the industry. Correspondence on this subject is invited.—Ed., "F.W.")

Budding Fruit Trees.—"A.J.M." Cherry Gardens, writes:—Is it advisable to bud Apricots and Peaches on Almond trees?

Answer (by G. Quinn, in the "S.A. Journal of Agriculture).—The Almond is only desirable as a stock for Peaches and Apricots when certain soil and drought conditions have to be overcome. Soils which are too highly calcareous or dry for Peach or Apricot roots will not seriously injure the Almond. Generally speaking, unless exceptional advantages are offered for the fruit grown in the locality, the Almond is not a commercial success as a stock for these fruit trees.

Control of Insect Pests and Fungus Diseases.

Helpful Address on Orchard Practice by Mr. A. A. Hammond (Department of Agriculture) Before a Meeting of Fruitgrowers at Pakenham, Vic.

UNDER THE AUSPICES of the Victorian Fruit Marketing Association a meeting of fruitgrowers was recently held at Pakenham. About 60 growers attended from local districts, others travelled considerable distances. Mr. H. G. Colombie, who presided, said the meeting was to provide growers with first-hand information as to the doings of the V.F.M.A. A great deal of valuable work had already been accomplished, and much more was awaiting attention.

Also an opportunity was provided for growers to discuss practical orchard work, and for this purpose Mr. A. A. Hammond, Senior Orchard Supervisor, Department of Agriculture, was in attendance. The Chairman then called on Mr. Hammond for his address.

Orchard Pest Control.

Mr. Hammond said the subject of fruitgrowing was a large one and could not be dealt with comprehensively in the time at his disposal. He proposed to deal particularly with the control of the more important insect pests and fungous diseases. Pruning, manuring, interpollination, and cultivation, were all important factors, but could only be referred to briefly.

The black spot fungus was the most destructive fungus disease of the Apple and Pear, and the codlin moth the most destructive insect. The San Jose scale was another serious insect pest, but fortunately the orchards in the south-eastern districts were free from this pest.

The brown rot of stone fruits was another serious disease, and Peach growers in the metropolitan districts sustained serious losses during the present season, despite the fact that more than ordinary care was taken by growers to control it.

Lead Arsenate and Oil.

With regard to codlin moth, experiments were carried out at Doncaster and Templestowe last season, and were being continued this season, chiefly to ascertain the relative value of arsenate of lead combined with white oils and arsenate of lead only.

"This demonstration convinced me," stated Mr. Hammond, "that the oil was an additional control, more effective when used in combination with lead arsenate than the use of lead arsenate alone." When mixing oil and arsenate there should be no curdling. The addition of spreader prevents curdling. Some oils were inclined to curdle, particularly when used with an acid arsenate. Spreaders should be used at the rate of ½ lb. to 80 gallons of water. Most of the brands of arsenate of lead were acid; the neutral or basic were not so efficient for controlling the codlin moth as the acid type. Most of the arsenates on the market were acid, consequently growers had to be particularly careful when mixing with oil. The usual proportions were 2½ lbs. arsenate of lead powder or 5 lbs. paste to 80 gallons of water.

Preparing the Mixture.

In preparing, a clean barrel was imperative. The spreader should be added to the water first, then the diluted arsenate of lead, and when the barrel was three parts full, the oil should be added. Some growers advocated adding the arsenate of lead last, but he believed this to be a wrong practice. When the barrel was half full the agitator should be set going. The oil should be emulsified and diluted before pouring into the barrel. Do not use too much oil, as this induces yellowing and store blemish. Jonathan spot would also develop and blemish with a dark brownish greeny stain.

The following spraying programme was recommended:

First, at petal fall—Arsenate of lead only.

Second spray—Three weeks after the first spraying, arsenate of lead only.

For the third and fourth spraying—½ to ¾ of a gallon of oil should be added to each 80 gallons of mixture. For later sprayings the dosage of all should be reduced to 3 to 4 pints to 80 galls. When prepared with spreader and sprayed late in the season, no unsightly spray blotches were visible, yet the fruit was effectively covered. The oil acted as an ovicide and destroyed the eggs of the codlin moth.

Life History of the Codlin Moth.

There was an idea amongst some growers that there were three distinct broods of codlin moth: one at petal fall, the second about Christmas, and the third about February. Experiments had shown, however, that there were not these three distinct broods as had been suggested. The broods overlap and develop according to weather conditions. Frequently it was the over wintering caterpillars which hatched before Christmas. Sometimes they did not hatch then. At 80 degrees Fahr. the grubs hatched out, but when the temperature was about 60 it took a long time for them to change. In a recent test it was noted that some of the grubs hatched in November, some in December, some in January, while others did not hatch until the following spring. It was thus clearly impossible to destroy all the young grubs before Christmas. So much depended on the season.

Orchard Hygiene.

With regard to orchard hygiene, a grower should not leave any harbors for the caterpillars. The grubs would hide in loose bark, tree wounds or in clods under the tree. Traps could be provided by placing pieces of paper rolled up tightly in a fork of a tree or by using bagging. From these traps the overwintering pests could be removed and destroyed. If bandages were placed on trees they should be examined every ten days, in the warmer months. The second point in orchard hygiene was to collect and destroy fruit as soon as it falls, particularly after a heavy wind.

In the spraying experiments last season on Mr. Thiele's orchard, Pears were sprayed six times. The Keiffer, which is an early blooming variety, was sprayed at petal fall, again three weeks later, and then at monthly intervals, but very little codlin was noticeable until early in March. Actually on March 12, codlin grubs were seen eating their way into the fruit.

The zinc bands which were placed round the trees to prevent root borer from crawling up the trees, provided a splendid harbor for codlin. By correct methods thoroughly applied, the effect in codlin control was cumulative. This applied more or less to all orchard pests.

In the case of an orchard badly infested with codlin moth, experiments had demonstrated that when efficient control measures were practised and an increase of, say, 10 per cent. in the yield of clean fruit was obtained in the first season, a much larger percentage of clean fruit was obtained in succeeding years, provided that the same control measures were continued. It was a mistake, therefore, when considering spraying costs in relation to yields to calculate on the results of one season's work. In the first season the more expensive programme would not appear to be justified, but if taken over a period of three or four years it would be found that while the percentage of clean fruit would be increased in succeeding years, the cost of control measures would be reduced.

Spray at High Pressure.

In spraying it was important to have high pressure. He recommended pressure 300 lbs. per square inch. Growers needed—(1) the right mixture; (2) not to leave too long periods between spraying; (3) thoroughness. Every part of the tree should be sprayed.

Lures Are Effective.

Another useful method was that of using lures. These could be made by using one part molasses to 16 parts of water. Fern pots were useful as receptacles for lures. Pots holding 3 pints were recommended. These had no drainage holes. If flower pots were used, the drainage holes should, of course, be plugged. Provision had to be made for hanging these in the trees. With a temperature at 65 degrees F. they had caught 100 moths in six lures., 75 per cent. of which were females containing eggs.

Half-gallon lever top tins were also used and found effective, but are not as durable as the earthenware pots. The lever top tins lasted only for one season, but the fern pots, with care, were practically everlasting.

Moths were caught right throughout the season, thus providing a good guide as to when they were on the wing. The trees should be sprayed three or four days after it was discovered that the moths were on the wing.

The woolly aphis parasite (Aphelinus mali) is doing wonderfully good work. The optimum temperature for the working of this parasite was 75 to 80 degress F. That for the woolly aphis was much lower. The present season had been all in favor of the aphis. Growers need not be alarmed, as the alphelinus would get going and quickly clean the aphis up, on the return of normal summer weather.

Cool Storage Experiments.

In the competitive demonstration and spraying experiments which are being continued this season in the orchards of Messrs. Thiele & Petty, it is intended to take at least a bushel of fruit from each of the plots at harvesting and have them stored at the Government cool stores under exactly similar conditions. Three of the plots are being sprayed with different brands of oil combined with arsenate of lead and one plot with arsenate only. The storage tests, which are under the control of Mr. Tindale, should settle the question as to the effect of oil in the matter of store blemish.

Brown Rot.

Brown rot attacked Peaches, Apricots, Apples, Quinces, Cherries, Plums, etc. The carry over from one season to another was largely by means of mummy fruit hanging on the trees. Diseased wood and spores adhering to bark and bud scales were also a source of infection.

Mummies should be collected and burned—or else buried very deeply. If lightly buried in damp soils a toadstool-like growth known as apothecia would develop and spread the spores again. This growth, however, was rare in this country, though common in other parts of the world.

All diseased wood should as far as practicable be cut out at pruning time and burnt, and trees should be opened up to the light and air.

The thinning of fruit and of crowded growth in early summer should also be practised. Lime-sulphur was the most efficient fungicide for this disease. Spray with 1 in 9 lime-sulphur before buds swelled at about the end of July. Spray again in the pink stage with lime-sulphur, 1 in 35. When infestation was likely to be bad lime-sulphur, 1 in 80, or self-boiled lime-sulphur, 8-8-50, should be applied about a month after fruit had set, and again one month before ripening.

When the ripening of the fruit synchronised with rainy weather the conditions for the multiplication and spread of this disease were most favorable.

Unfortunately, lime-sulphur sprays applied at this time left an objectionable residue on the fruit. If an efficient fungicide could be found that could be applied about a week before the fruit ripened and one that would leave no spray residue, it would be a great boon to Peach growers, particularly in a season such as the present one.

Tests were being carried out by officers of the Science Branch with ammonium polysulphide at the orchard of Mr. W. A. Webb, Doncaster, and the results so far were sufficiently encouraging to warrant a continuance of the experiments.

The trials made with atomic sulphur had so far not been a success. This was probably due to the fact that the temperature and conditions most favorable to the development of the fungus were unfavorable to the liberation of the active emanations of the sulphur. Unless this took place the sulphur was valueless.

Black Spot.

This disease was undoubtedly one of the worst with which Apple and Pear growers in the southern districts of Victoria had to contend. There was also a greater difference of opinion amongst practical growers in respect to the most efficient control measures than in the treatment of any other disease.

The cause of these differences of opinion was due not so much to the relative efficiency of the chief fungicides in use, viz., Bordeaux mixture and lime-sulphur, as to the time when the spray was applied and the manner of application. Bordeaux mixture did not become active for some days after application. Lime-sulphur acted at once, but it did not afford protection to the fruit, etc., for as long a period as Bordeaux mixture.

Multiple spraying was, as a general rule, necessary in the case of lime-sulphur, and to a lesser extent in the case of Bordeaux. However, in some seasons if either fungicide was applied just at the right time one application may prove entirely satisfactory.

A grower at Ringwood

obtained excellent results

with multiple sprayings of lime-sulphur. The first application was given at the early pink stage at a strength of 3 gallons to 80. The second 2 to 80 at petal fall, and the third 1½ to 80 about 14 days later.

The question was often asked—Would it not be possible to eliminate one or more of these applications and still obtain efficient control? The answer is that there have been many instances where only one spraying has proved effective, but generally two or more sprayings, particularly in the case of lime-sulphur, have been found to be necessary. Of course, the situation of the orchard, the varieties grown, the season, all have to be considered.

In this regard a rather interesting incident came under notice a few years ago. A block of Rome Beauty Apples in Mr. Ireland's orchard, Mitcham, were all sprayed with lime-sulphur at the pink stage. The next spraying was at petal fall, but as three rows had not received a spraying of red oil in the dormant season, which had been applied to the remainder of the block, these three rows were in full bloom when the other trees were in the petal-fall condition. The petal-fall spray was applied to all of those in that condition, and also to one row of trees in full bloom. The remaining two rows in full bloom were not sprayed at this time. About a fortnight later the whole of the block was sprayed, and at this time all the fruit was apparently free from disease. However, about a week later the spot developed on the fruit of those trees which had not received the second spraying, and at harvesting, while those which had received the petal-fall and full-bloom spray were 99½ per cent. clean, the fruit on the two rows referred to was approximately only 25 per cent. clean. It is evident from this that this fungus infects the fruit about 13 days before the spots appear, and was active soon after the time when the petal-fall spray was applied.

Spraying Preventive, Not Curative.

Spraying was preventive and not curative, therefore the most that could be done by spraying, once the spot appeared, was to check infection of clean fruit and prevent it spreading.

The use of dual-purpose sprays when treating for late black spot and codlin moth was dealt with at some length. The combined spray recommended was 5 lbs. arsenate of lead paste, or 2½ lbs. of powder ½ lb. casein spreader, 1 gallon of lime-sulphur, 80 gallons of water.

The order of mixing

combined sprays was:—First lime-sulphur, second spreader, third arsenate when starting to spray. Some add the lime-sulphur at the very last, but the best authorities advised adding the lead last. It should be remembered that while the use of commercial spreaders, which were mostly lime, reduced the danger of burning in combined lime-sulphur and arsenate sprays; lime had the effect of making the arsenate less efficient as an insecticide.

As was generally well known, there was a danger of russeting the fruit with Bordeaux and with burning fruit and foliage with lime-sulphur.

There was a danger of burning with lime-sulphur if applied on a hot day. The danger was greater in the afternoon. Showery weather also induced burning. With Bordeaux mixture there was also a danger of damage in showery weather.

The use of good water was most important, and care should be taken that the spraying vat, hoses, etc., were throughly cleansed.

When lime-sulphur was kept from the previous season it must be hermetically sealed, and there was evidence that if kept in iron vessels there was a danger of a chemical change taking place which might prove destructive to foliage.

A progressive report of the results of experiments carried out at Croydon was read by Mr. Hammond. On the present indications, an application of Bordeaux mixture at the green-tip stage, followed by a 2 to 80 lime-sulphur at petal-fall and 1½ to 80 14 days later, gave the best control. It was also noticeable that where an excess of lime was used in the Bordeaux mixture (9-12-80 formula) there was more russeting of the Jonathan Apples when the spray was applied at the early pink stage.

The importance of cultivation and the dealing with diseased leaves was emphasised. These leaves were a carry-over of Venturia and should not be turned under in autumn and turned up in the spring, at a time when the trees were most susceptible to infection and the fungus was active.

With regard to pruning,

this factor was correlated to manuring and other cultural practices.

It had often been observed that fruit trees showing fruit buds in abundance would blossom profusely, but fail to set their fruit. This first growth, blossoms, leaves, etc., was made from the plant food stored up during the previous season's growth. Should the mineral nutrients, including nitrates, be deficient or if there was not a proper balance between the carbohydrates and the soil nutrients, the tree failed to set its fruit. These conditions very often obtained with the Winter Nelis Pear. In cases of this kind a thinning out of spurs and the application of nitrogenous manures restores the balance between the carbohydrates and soil nutrients.

Conversely many vigorous young trees were unfruitful because of the relative deficiency of carbohydrates as compared with soil nutrients. These trees should be pruned lightly and opened up as much as possible to the sunlight, without which the necessary plant food would not be stored for the production of fruit.

Biennial Cropping.

The biennial cropping habit of some varieties could not be remedied by thinning of the fruit in the ordinary way. Mr. Hatton had recommended the removal of the blossom on individual limbs or trees, which caused these limbs or trees to bear in the off year.

Although this had not been practiced in this country, there had been instances of biennial croppers having had their blossoms burnt off through a mistake in spraying, and trees so treated bore a crop in the "off" year. If it were practicable to destroy the blossom on alternate limbs or on half the trees of the biennial cropper, growers would certainly have half their trees bearing every year.

There was no time to deal with the subject of inter-pollination, but this was undoubtedly an important factor in fruit production.

* * * * *

Questions and Answers.

In answer to questions, Mr. Hammond stated that the Delicious Apple, in many districts, was to a certain extent delicate and subject to red spider. This variety, however, grew very well in the Werribee and other districts, but required rather generous treatment. It was a variety which would not do well where the conditions were the least unfavorable.

Regarding leaf scorch, he had discussed this matter with Mr. R. G. Hatton, of E. Malling, on his recent visit. Where summer rains had leached the potash out of the leaves, potash should be applied at the rate of 1 to 1½ lbs. per tree to make up the deficiency.

In answer to further questions, Mr. Hammond stated that as a lure a 10 per cent. dilution of vinegar had been tried with fair results, but the molasses lure was better in the southern districts.

Black spot was carried over by fallen leaves. If these dead leaves could be got rid of it would do away with a big source of infection.

Mr. F. Thomas suggested it would be of value to have a man set specially aside to examine leaves for indications of the black spot development, so that growers in defined areas would, on the information being broadcast, know just when to spray to best control the black spot.

Mr. J. W. Bailey said it would probably pay the growers to employ a scientist for this purpose, as by spraying at the right time savings worth thousands of pounds could be effected. Growers should be notified when the spores were developing, as at the present time they were working in the dark, and many were spraying at the wrong time and thus wasting money.

Mr. S. Brown stated that growers had noted the experiments which were being carried out by the Department. Many of their recommendations, however, necessitated sprayings with expensive materials, and he considered the Department would be doing good service if they could discover means of cheapening the cost of spraying to growers. What results had been obtained with using crude oil?

Mr. Hammond stated that crude oil was not an effective ovicide. Further, its effectiveness varied according to its constituent parts and the impurities therein. It was unsafe to use any but refined oils in the combined sprays. Pure white oils were very effective. In answer to a further question re black spot, Mr. Hammond stated that spraying with 1-15 when the trees were in bloom had given good results. Growers, however, must use their intelligence when judging the climatic conditions. In a recent test lime-sulphur 1-18 had been applied, and good results had been obtained, though this was the only spraying given. However, for effective control multiple spraying was desirable, and in some districts and with some susceptible varieties, essential.

A vote of thanks to Mr. Hammond was carried, on the resolution of Messrs. Ahern and J. M. Jacobs.

QUEENSLAND DEPARTMENT OF AGRICULTURE.

The Department is administered by the Hon. Harry F. Walker, M.L.A., whilst the Agricultural Section of the Department is in charge of the Director of Agriculture, Mr. H. C. Quodling.

Among the officers of the Horticultural Division are:—

G. Williams, Director of Fruit Culture.

J. H. Simmonds, pathologist, investigating leaf spot of Bananas, and various rots of the Pineapple.

L. F. Mandleson, assistant pathologist, investigating citrus diseases.

E. Jarvis, entomologist, attached to the deciduous fruits section at Stanthorpe, investigating the fruit fly, codlin moth and other problems.

W. A. T. Summerville, assistant entomologist, investigating citrus pests.

J. A. Weddell, assistant entomologist, investigating Banana pests, beetle borer, etc.

On the staff of the Fruit Branch are:—

H. J. Freeman, Chief Instructor, Northern Division, supervisor of the Bartle Frere Experimental Station and Plant Breeder for Tropical Plants.

H. Barnes, Instructor in Fruit Culture at Headquarters, chiefly engaged in propagation, including the methods adapted to different classes under varied conditions.

R. L. Prest, Instructor in Fruit Culture, advising citrus growers on methods of cultivation, fertilising, pruning, etc.

E. F. Duffy, Instructor in Fruit Culture, Bowen, general.

H. St. J. Pratt, Instructor in Fruit Culture, in charge of the Stanthorpe District.

Engaged on Banana work are:—

W. J. Ross, Senior Inspector, and 16 inspectors. These officers are working under the Banana Industry Protection Act, which was recently passed by Parliament.

Inspectors under the Diseases in Plants Act stationed at places of entry number 11, of which Mr. A. Person is Senior Inspector and Deputy Chief Quarantine Officer of Plants.

Field officers other than instructors number four.

Among the recent activities of the Department are the establishment of a Budwood plot (citrus) at Gayndah, for the purpose of supplying budwood to nurserymen.

(II.) Ascertaining the effect of draining on Stanthorpe soils.

(III.) Soil treatment for Pineapples, citrus and other crops in various parts of the State.

(IV.) Establishment of the Experiment Station at Kin Kin for the investigation of leaf spot, beetle borer, and for fertiliser effects on Bananas.

(V.) Establishment of an Experiment Station at Bartle Frere, in Northern Queensland, for the purpose of testing new varieties of Bananas, the propagation of tropical plants (principally fruits), the improvement of varieties by cross-pollination, and selection of seedlings to improve the quality of Pineapples, Papaws, etc.

A new industry which is at present in its infancy, but which promises to develop largely in the near future is the nut industry, and the varieties being recommended to growers are the Queensland nut (Macadamia ternifolia) and the Pecan. The former is indigenous to the State, whilst the latter will thrive under our climatic conditions.

COLD STORAGE.

Formula for Fumigating Chambers for Mould.

For each 1,000 cubic feet of space use 8 oz. of permanganate of potash, 1 lb. of formaline (the usual commercial 40 per cent. solution), and 1 pint of water.

Now to do this you want a vessel, say tubs or barrels, because when you tip the stuff in, it all rises up and is likely to overflow.

First dissolve the Condys crystals (or permanganate of potash) in the water in the vessel you are going to have in the room, and after it is thoroughly dissolved, tip in the formalin and get out of the room as quickly as possible and shut the door.

Keep the door closed for 48 hours, if possible, then open the door and blow the gas out of the room.

This mixture gives off a gaseous vapor and will kill all the mould germs.

Have a vessel in each room if possible. Where rooms connect by means of ducts, a vessel in every second room might do, but one for each room is better.

I understand that this formula is used in the Batlow and Orange cool stores, and is effective.

(Signed) F. CLARKE,
Wantirna Cool Stores.

TASMANIA.

2,000,000 Cases of Apples and Pears to be Exported Overseas.

Tasmania Joins Australian Apple and Pear Export Association.

FRUIT EXPORTS from Tasmania will be heavier than were at first anticipated.

Advices just to hand state that the total shipments are expected to be just over 2,000,000 bushels of Apples and Pears.

Shipments from Hobart.

Sailings in February were:—Euripides, 21st, for Liverpool and London; Orontes, 26th, for London, and 28th, Moreton Bay, for Hull and London.

The following is the list of steamers for March, together with sailing dates and ports of destination:—

March 2, Strassfurt, Hamburg; March 4, Port Bowen, Hull, London, Hamburg; March 10, Hororata, London, Liverpool, Hamburg; March 11, Oronsay, London; March 12, Barrabool, London; March 14, Nestor, Liverpool, Glasgow; March 18, Cathay, London; March 21, Ceramic, Liverpool, London; March 21, Balranald, London; March 24, Stirlingshire, Liverpool, Manchester; March 26, Orama, London; March 28, Hobson's Bay, Hull, London; March 28, Leuna, Hamburg; March 30, Port Gisborne, Hull, London; March 30, Port Gisborne, Hamburg.

Growers are asked to note that shipments for Hamburg must be consigned separately from fruit intended for shipment in the same overseas steamer to other ports. A separate advice note is necessary also.

Advice Notes.

In all instances, advice notes must be posted so as to reach their shipping agents ahead of the arrival of the fruit. In addition to posting an advice note, growers are requested to hand a copy to the captain of the river boat or the carrier bringing the fruit to Hobart. It is very important that these instructions regarding advice notes should be carefully followed out. Advice notes must contain:—

Particulars of the number of cases of each variety; grower's shipping brand; name of the English consignee; the English consignee's shipping number; and the grade—"Special," "Standard," or "Plain" (according to the quality of the fruit).

Branding of Cases.

Growers who have not previously shipped fruit overseas are asked to note that it is necessary for the following to be shown on the case:—

(1) Grower's shipping brand and origin of fruit.
(2) The English consignee's number.
(3) Initials denoting variety of fruit.
(4) Size of fruit; and
(5) Grade—"Special," "Standard," or "Plain."

Example.

J. BROWN
TASMANIA, AUSTRALIA.
383
CLEO
Standard. 2½ inches.

Shipping Numbers.

The shipping companies have notified that all fruit for shipment in overseas steamers must contain a shipping number as the leading mark, and that they will not accept responsibility for any sub-marks. This was advertised recently by the Oversea Shipowners' Association.

Export Regulations.

In answer to enquiries, growers are notified that there are no alterations or new regulations. At present the regulations as to varieties, grading, packing and branding remain the same as last year.

Pears may be shipped on the following vessels:—Port Bowen, Hororata, Barrabool (subject to arrangement with the master), Ceramic, Stirlingshire, Balranald (subject to arrangement with the master), Port Gisborne.

TASMANIA.

AT a meeting of the Tasmanian State Fruit Advisory Board, held at Hobart on January 27, Mr. B. J. Pearsall, M.H.A., presiding, it was decided to defer the suggestion for formation of an Overseas Committee of Agents, in order to give representatives an opportunity to discuss the scheme with fruitgrowers in their respective districts.

Australian Export Association.

It was unanimously decided, on the motion of Mr. M. Calvert, seconded by Mr. F. Harrison, to apply, on behalf of the Tasmanian Apple and Pear export industry, for membership in the Australian Apple and Pear Export Association.

Applications were called for wharf representatives for North and South Tasmania. It was decided that every third meeting of the Board be held in Launceston.

At a meeting of the State Fruit Advisory Board of Hobart on February 10, it was decided to obtain further information before agreeing to a request from the Associated Selected Agents, Sydney, requesting that firms acting as merchants or agents be allowed to become members.

Royal Commission's Report.—It was decided to request the Minister for Agriculture to bring in a Bill incorporating the State Fruit Advisory Board.

Mr. M. Calvert was appointed for Southern Tasmania, and Mr. A. H. Weedon for Northern Tasmania, to act on the Committee of Shipping Agents in allocating space for the 1931 overseas export season.

PORT OF LONDON.

The reasons for London being such an excellent market for fruit are the following: that sales can always be depended on for best quality fruit, at highest prices, and besides its own vast population, London supplies most of the seaside resorts. Bodies of tourists make London their headquarters, and want the best of all produce. London has always been the centre of the Australian and New Zealand fruit trade.

Mr. J. W. Barker, a well-known Victorian fruit exporter, just returned from a trip, writes on the new fruit market in London as follows: "The facilitities for handling are second to none in the world. Every convenience for the sales and showing of fruit are provided, all fruit is sold by auction."

Cooper's Alboleum, which is made in Australia by Messrs. William Cooper & Nephews (Aust.) Ltd., 4 O'Connell-street, Sydney, is a specially prepared emulsified white oil for use in the control of scale and insect pests on citrus and other trees. Attention is directed to their advertisement.

Marketing Jonathan Apples in Brisbane.

Supplies Arriving from Kentucky, N.S.W.

Interstate Growers Are Asked to Note Changing Conditions.

AN IMPORTANT DEVELOPMENT is taking place in the Brisbane market, which will seriously affect the selling of Jonathans during this year, writes Mr. H. Spanjer, a director of Hedley Geeves Ltd., growers' agents, Brisbane, in an urgent letter to the "Fruit World," dated February 23. Continuing, the letter states:—

"Conditions are continually changing in the fruit trade, and a review of the market operations to-day will show a vast difference as compared with those say of ten years ago. The instance in point which should be of considerable interest to all growers of Jonathans in the State of Victoria, is the advent of what is practically a new district in the marketing of this variety.

The Post-war orchards

which have been planted fairly extensively in the New England districts of New South Wales are coming into bearing. It may be said that so far as the district of Kentucky is concerned, that 1931 will be the first year that will see anything like a full crop of Jonathans despatched. The geographical situation of this district is such that Brisbane would be its normal outlet. This is because this centre lies practically half way between Sydney and Brisbane.

As readers of the "Fruit World" will no doubt know, Brisbane is a good market for Jonathans from March onwards. At about this time of the year the Stanthorpe, or locally-grown Jonathans begin to finish. That is to say the peak period is just about passed, and the ripeness of this fruit does not allow it to be sent too far into the country. During March and April the weather is still warm, and consequently fruit has got to be in very firm condition to travel long distances, which sometimes are necessary in this State.

It so happens that the

Kentucky season for Jonathans

commences just at the termination of the Stanthorpe. Last year only a few thousand cases came up here from Kentucky, and they arrived just before the Victorian supplies, consequently there was no overlapping. This year the Kentucky Jonathans are just a little late, and their marketing is just about to commence.

We are told that this district will have some 35,000 cases of Jonathans to dispose of this year, and estimating that half of them come to Brisbane, there will be a supply of

3,000 cases per week

for six weeks. Prices will not go very high for many reasons, consequently a serious supply of Victorian Jonathans which would arrive here during the marketing of the Kentucky crop would cause an unnecessary drop in values.

It may be of interest also to remark that the Kentucky fruit is

very highly colored

and very attractive in appearance, also that a considerable quantity of it is marketed through a packing house, and is attractively got up in Canadian cases, with a smart label showing the numerical contents of the box.

These Jonathans are very popular and we are inclined to think they would hold their own against most of the competition which they may have to meet.

The Kentucky people are in a favorable position so far as the Brisbane market is concerned, in that their freight charges are so very much less than the Victorian. Truckloads of Kentucky fruit only carry a freight charge of 1/2½ a case, and can be landed in Brisbane at 48 hours' notice.

In view of these circumstances, and also because we have been lead to believe that the Victorian crop is not a heavy one this year, it seems to us that Victorian growers will be wise to tackle the Queensland market this year very cautiously.

Another point which we think should be mentioned, is that, in our opinion, undue prominence has been given to the supposed prosperity of this State. Just now certainly conditions here are not quite as bad as we are lead to believe they are in New South Wales and South Australia, but the purchasing power of the public here is very restricted and unemployment, unfortunately, is far too prevalent. The position is somewhat aggravated by the fact that an impression has gained force to the effect that Queensland is doing fairly well, and consequently nearly everybody who has anything to dispose of is inclined to try Queensland as a means of outlet. For this reason our market is receiving rather more attention than it generally does, and the brands of fruit from new districts can often be seen on our market this year.

There is

no cool store at Kentucky,

consequently the growers in that area must market their Jonathans as soon as they come off the trees, and since Victoria is so splendidly equipped with cool stores in the fruitgrowing centres, and since there is every prospect of a better market later in the year, we think that it would repay Victorian Jonathan growers to give some consideration to the marketing of their crop this year, bearing in mind the conditions which we have related above."

PEACHES, APPLES, PLUMS.

New Varieties.

Information concerning new varieties of fruits is contained in a letter just received from John Brunning & Sons, of Somerville Nurseries, Somerville, Vic., as follows:—

Nursery Stock.—This year our stock is particularly well grown, and embraces all popular varieties of fruits. Among the canning Peaches is **Peak Cling**, which was awarded first prize for a canning Peach at the Leeton Show. On the heavier soils this Peach is cropping freely, and is one of the most promising of the clear yellow Peaches, ripening about February 1.

Apples.—Of the newer varieties of Apples, Willie Sharp stands as being one of the best. The Apple is medium sized and shaped similar to a flattened Cleopatra, and has no tendency to bitter pit. The Apple is fit for shipping during the first weeks of February. Comments from London on a trial shipment from Victoria were "Good carrier, good appearance, would soon capture market if shipped in quantity." New Zealanders have successfully shipped this Apple to European markets for some time past—it is therefore a well-tested variety.

Recent importations we have made from England, are Plums, Purple Pershore and Belle de Loraine; Apple, Laxton Superb, these varieties have yet to be tested.

Cover Crops for Orchards.

Now is the Favorable Planting Time

GREEN MANURING is receiving increasing attention from fruitgrowers.

Seeds sown in the autumn are in fit condition to plough under in the spring, thus adding humus and nitrogen.

On this subject of cover crops, seasonable advice is to hand as follows:—

Western Australia.

Mr. Geo. W. Wickens, Superintendent of Horticulture, Perth, W.A., writes under date February 11:—

Re cover crops—1½ bushels of Peas per acre with 2 cwt. of superphosphate per acre, sown in April, usually gives an excellent growth for ploughing under in early spring.

Occasionally, however, there are orchard soils lacking in nitrogen which require the addition of a nitrogenous fertiliser before the Peas will make a satisfactory start. Where this occurs, 1 cwt. of superphosphate per acre and 1 cwt. of blood manure per acre at time of sowing has given good results.

Victoria.

Mr. J. M. Ward, Superintendent of Horticulture, Victoria, gives the following hints:—

The best cover crop for orchards depends, of course, on local conditions; and there are a large number of crops in use.

The most widely used, however, and the most frequently recommended are Field Peas and Tick Beans, sown together at the rate of one half bushel to one bushel of each; or Oats at the rate of one to two bushels per acre. In more acidic soils Oats are generally preferable.

With both crops one to two cwt. of superphosphate should be sown.

Tasmania.

The use of cover crops is advocated by Mr. P. H. Thomas, Chief Horticulturist. After describing the benefits derivable from the turning under in spring of the cover crops planted now, thus improving soil texture and drainage, Mr. Thomas asks, "How can we conserve and supplement the supplies of humus in a soil in the most economic manner?" Continuing, he states:—

In the majority of fruit-growing districts there is insufficient farmyard manure available to supply the needs of the district, and some other substitute must be used.

The cheapest method

of adding organic matter to a soil is by "green-manuring," or the growing and ploughing in of winter cover crops. If these are carefully selected the nitrogen content of the soil will also be increased.

Clean cultivation during the spring and growing months, followed by a cover crop in the autumn, is a system of working that may be applied to most orchard soils, and can be utilised with beneficial results more generally than any other system of orchard management.

The best time to sow down a cover crop is generally early in March. This will ensure the benefit of the autumn rains, and will give it time to develop sufficiently to be able to withstand the winter frosts.

The most satisfactory method is to sow by means of a drill, leaving a space of approximately 1 foot 6 inches on each side of the trees. Some growers take exception to sowing down their orchards while the fruit is yet on the trees, considering that the carting and harvesting operations will damage the green crop.

This can be obviated by sowing only every alternate strip of land the first year, and following with those missed the ensuing autumn. This will allow harvesting, carting, and any winter operations to be carried out on the lands which are not growing the crop, and is generally found to be the most convenient method of operation.

The green crop should be ploughed under as soon as possible in the following spring, waiting long enough to obtain the maximum amount of growth, and without delaying the work until the warm dry weather is likely to be experienced. The lands green-manured one season might be limed the following one.

There are two main types of cover crops that can be grown—legumes and non-legumes. Peas, vetches, beans, and clover belong to the leguminous species. Cover crops of these are valuable, as they not only assist in increasing the humus, but are also capable of gathering nitrogen from the air and when ploughed under increase the nitrogen content of the soil.

In order to assist in the growth and development of a cover crop, especially in soils where very little organic matter is present, it is advisable to apply a dressing of superphosphate at the autumn sowing, approximately from 1½ cwt. to 2 cwt. per acre of this fertiliser being distributed over the area.

The following are the principal cover crops that can be grown in Tasmania, with the approximate amount of seed required per acre if sown alone:—

*Horse-beans	1½ bushels per acre.
*Peas	2 to 3 bushels per acre.
*Vetches (tares).. ..	1½ to 2 bushels per acre.
*Lupins	1½ to 2 bushels per acre.
*Clovers	10 to 12 lb. per acre.
†Rape	2 to 4 lb. per acre.
†Oats	3 bushels per acre.
†Rye	1½ bushels per acre.

*Leguminous crops gathering nitrogen.

†When sown in conjunction with a legume the rate per acre is correspondingly decreased.

New South Wales.

Mr. C. G. Savage, Director of Fruit Culture, advises as follows:—The N.S.W. Department recommends the sowing of leguminous crops for green manuring of orchards. The three crops favored are field peas, tick bean and golden vetch.

The field pea and golden vetch are found to be the best type on sandy soils, while on the heavier land the tick bean will be found satisfactory.

Seed should be sown during February or March, according to the rainfall in non-irrigated areas, and just prior to or after an irrigation where irrigation is practised.

The seed should be sown at the rate of three-quarters to one bushel, together with 2 cwt. superphosphate per acre on the actual area sown.

Cover Crops in Vineyards.

The actual area sown varies with the method of sowing the crop.

For instance, in some districts, especially in vineyards, the green manure crop is sown between alternate rows of vines, thus leaving every other space between the rows free of growth, in which the vine prunings can be thrown, this of course facilitates the gathering up of the prunings. If such a system is followed the actual area sown will be about a quarter of the actual area of the vineyard, as the strip of peas sown down the centre of the row occupies about half the distance between the rows of vines.

During the following year the alternate strips between the rows, which were not sown the previous season, are planted, and those that were sown are left vacant.

In the case of fruit trees

the area sown will be about half the total area of the orchard, as usually crops are planted between each row of trees and occupy about half the space between the trees.

It is an established fact that leguminous crops require a fair amount of lime in the soil to obtain the maximum results, consequently where soils are somewhat light and acid, applications of about one ton of agricultural lime per acre will greatly assist in improving the growth of the green manure crop. The crops should be ploughed under when they have reached their maximum of growth which is during the flowering period. At this stage the plants are in a succulent condition, and will readily decompose when ploughed in, provided the soil contains sufficient moisture.

To ensure the soil contains sufficient moisture, the crop should be ploughed under by the end of July or early in August. If the plants are left longer the stems become hard and fibrous, and with the lessened moisture content decomposition of the plant is considerably delayed, with the result that air pockets are formed in the soil. Such condition allows excessive evaporation of soil moisture.

The green crop under such conditions is likely to adversely affect the coming season's crop, and summer cultivation will also be affected as the tough stems of the plants will continually block the cultivators.

Cereals, such as barley, wheat and rye are at times sown for green manure crops. While these plants increase the humus content of the soil, they have not the power, through the agency of bacteria on their roots, to collect nitrogen from the air as is the case with legumes, consequently they are not as valuable for green manuring as are the legumes.

THE WORRY FALLACY.

"It is a fallacy that worry is a natural and inevitable incident of daily life. To some extent worry is temperamental, but even so, it can be controlled. If allowed to become a habit it controls both mind and will. It makes the wife nag, the husband snap, and the business man growl. It impairs your personal efficiency, and it breeds pessimism. The habit of worry tends to foster the idea that the sum of human happiness is in stroking, and patting, and petting. When things go well we purr, and when they go ill we scratch and spit. We need more iron in our blood and less water."—Geo. Gray Russel, M.A., LL.B., Sydney.

AUTUMN WORK IN THE ORCHARD.

Spraying and Disease Control.

Seasonable Notes From New Zealand.

AS THE CROPS APPROACH MATURITY, the spray programme will gradually taper off, but the late-ripening varieties will still require attention for mealy bug, red mite, and fungoid diseases. With the dry hot weather red mite will increase rapidly, and trees from which the crop has been picked are often overlooked, allowing this pest, mealy bug, and other insects to continue their depredations and complete their breeding-season without interruption. The consequent loss in tree-energy may be sufficient to cause premature defoliation and adversely affect the next season's growth, as well as necessitating a heavy dormant spraying to destroy the eggs prior to commencement of next season's growth.

Judicious applications of

summer oil sprays

will lessen the number of overwintering eggs, and so reduce the infection that further control may not need consideration until hatching commences in the spring, when a much lighter application will be as effective as the heavy mixtures required for dormant dressings.

The practice of applying a

fungicide to storage varieties

prior to picking has much to recommend it. Black-spot, bitter-rot, and other fungoids will continue their development in storage, and the pre-storage spray may save loss and disappointment in packing out.

Where brown rot has been prevalent, time would be well employed in cutting out twigs or shoots which have been killed by the fungus spreading through the fruit-stalk, girdling the shoot, and forming cankers. These cankers are potential sources of infection during succeeding years, and can be located easiest while the foliage persists.

Silver leaf infection should be cut out before growth ceases, and if taken in time and the diseased portion removed below the infection the life of the tree may be extended. All exposed surfaces should be thoroughly coated with tar or paint as a protection against reinfection by spores. Where the infection is general, recovery cannot be expected, and the tree should be dug out and burned. The complete destruction is important, as the spores are produced after the wood has been killed, and any stumps left will be disseminators of the disease.—("N.Z. Journal of Agriculture.")

Honeymoon Salad.

The newly-married couple stopped for lunch at an hotel where the manager was over-attentive. For the tenth time he sailed up.

"And what can I get you now, sir?"

"Some honeymoon salad, please."

"You have me there, sir," replied the manager. "May I ask what it consists of?"

"Just lettuce alone."

Consignments of fruit for the United Kingdom and the Continent are solicited by Messrs. W. D. Peacock & Co., London Fruit Exchange, Spitalfields, London, E.1, England. Attention is directed to their advertisement in this issue.

Fruit Markets in Eastern Asia.

Opportunities in China.

From University of California, Bulletin 493.

No. 3 of Series. Continued from Page 101, February "Fruit World."

TO DISCOVER WHAT OPPORTUNITIES exist for the sending of fruit to the markets of Eastern Asia, an important delegation from California recently visited China, Japan, Korea, Philippine Islands, Siam, French Indo-China, Federated Malay States, India, and Ceylon.

A detailed report was prepared and issued in Bulletin No. 493 by the University of California. This report has been studied and is now being summarised for "Fruit World" readers by Mr. J. H. Lang, of Harcourt, Vic. The first article appeared in our December issue, the second in our February issue. The following is the third of the series:—

CHINA, one of the great countries of the world, has long been the goal of trade and commerce of many nations. Its enormous population and their great combined buying power has brought to its border for ages past travellers, merchants and armies in an effort to secure a share of the wealth of this great nation.

China is larger than Europe, and nearly as large as U.S.A. and Mexico combined. Its population almost equals that of Europe, and is about one-fourth that of the entire world. China proper covers 1,897,000 square miles. Its population is estimated at 436,000,000, a density of 238 people to the square mile. In addition, Mongolia, Chinese Turkistan and Tibet, with a population of 10,000,000, have been nominally a part of this Empire.

Certain sections of China are very densely populated. In the delta of the Yangtse River an area of 50,000 square miles, there is a population of 40,000,000 people.

China is largely agricultural, 80 per cent. of the population being engaged in farming. It has, however, many great cities. At least five of these have over a million population, and more than twenty have half a million or more.

Transport facilities are very meagre, there being only 8,500 miles of railway lines and only 18,485 miles of road suitable for motor traffic.

Water transportation is largely used.

The foreign trade of China is enormous, exports and imports totalling about £280,000,000 a year. U.S.A. holds about 20 per cent. of the foreign trade of China.

China's imports of fruit for 1924 comprised:—

	Pounds.	Value.
Canned fruit	1,829,333	£40,000
Dried fruit	26,337,000	£364,000
Fresh fruit	39,137,000	£280,000
Not otherwise recorded	33,303,000	£259,000

U.S.A. supplied about 60 per cent. of the canned fruit, 20 per cent. of the dried, and 9 per cent. of the fresh fruit. Dried fruit was obtained principally from Hong Kong, and fresh fruit from Hong Kong and Japan.

Australian and New Zealand dried fruit supplies were valued at £1,000. The principal fruits sent from U.S.A. were canned Peaches, Pears, and Cherries, dried Raisins and Prunes, fresh Grapes, Oranges and Lemons.

Only from 3,000 to 4,000 cases of Apples are imported annually from California.

There seems a good opening in China for Currants and Raisins, as out of a total average import of 5,000,000 pounds, Australia and New Zealand only supply from 50,000 to 70,000 pounds, while U.S.A. supplies from 3,000,000 to 4,000,000 pounds annually.

China imports large quantities of Oranges, the amount and country of origin for 1927 being:—

	Lbs.	Value.
Japan	27,118,389	£156,000
Russia (Pacific ports)	4,716,815	£50,000
U.S.A.	3,235,652	£55,000
Apples—		
Korea	4,427,222	£45,000
U.S.A.	972,376	£12,000
Japan	1,342,766	£10,000

China Now Growing Fruit.

China has also considerable fresh fruit production, Peaches, Apricots, and Pears being grown in considerable volume, and on the northern coast of the Shantung Peninsula the fruit industry has recently developed. Here the growing of Apples, Pears, and Grapes has become of commercial importance.

The fruit exports from the port of Chefoo approximate 8,000 tons a year. About 60 per cent. are Apples, the balance being made up of Apricots, Peaches, Grapes, Plums and Cherries.

The Four Main Centres.

Because of the great size and diversity of China, its markets for fruit will be discussed under four divisions—(1) Manchuria, (2) Northern China, (3) Central China, and (4) Southern China.

Manchuria comprises the three north-eastern provinces of China. It is similar in many respects to the prairie provinces of Canada. Area, 365,000 square miles; population, 25,000,000. A country of great fertility, but sparsely settled, though in recent years Chinese have been flocking to Manchuria at the rate of 800,000 to 1,200,000 per year, so that they are rapidly settling the country. They are more progressive and richer than their brethren further south.

The principal city is Harbin, with a population of 300,000, of which almost 100,000 are Russians; thus it has the largest white population of any city in Eastern Asia.

20,000 Acres Under Fruit.

It is estimated that 20,000 acres have recently been planted in fruit trees—Apples, Pears, Peaches, Grapes and Plums; thus imported fresh fruit has a serious competitor in the locally grown article. Fruit is sold at low prices—Pears 3½ cents each, Pomegranates 7 cents a pound, Apples 5 cents a pound, Oranges 11 cents a pound. The fruit is not always of best quality, but is sufficiently low in price to secure a ready market.

Fresh Fruit from California

is usually ordered by Chinese dealers at c.i.f. prices from agents of Californian exporters, and is transhipped at Japanese ports, and must proceed without refrigeration to its destination; the charges from ship to destination being 4/- per box in Southern Manchuria and 6/- in Northern Manchuria.

Material increases in this market seem possible, though there are many practical difficulties. The consuming centres are distant from the ports. Refrigerated fruit unloaded at the ports is liable to decay in summer and freeze in winter. The railway control is often chaotic.

Canned fruits are a decided luxury, and are reserved for special occasions.

China has a considerable canning industry of its own; the fruit, however, is of exceedingly poor quality, but the low price and gorgeous labels make them serious competitors with the imported fruits. The Chinese cans are filled one-third to one-fourth with fruit. The remainder of the can contains a very thin syrup.

Chinese dried fruits

are popular, and are sold in large quantities, treated with honey or sugar, they are looked on as a confection.

California Raisins in 1¾ ounce packages are a familiar sight all over Manchuria, and are the only Californian fruit in general use. Increasing the consumption of dried fruits in Manchuria depends largely on making the product known to the people.

The success of the Raisin is due to the time, effort and money that have been spent on its promotion. The small package has brought this fruit within the possible purchase of a large number of people.

Money spent in trade promotion would give results if coupled with a package well within the purchasing power of the people.

Next month—China continued.

TRADE WITH THE EAST.

Preliminary Review by Mr. W. Ranger.

Writing to the Victorian Fruit Marketing Association on February 23, the Secretary for Markets, Mr. E. J. Mulvaney, quotes from a letter received from Mr. W. Ranger, Manager Committee of Direction of Fruit Marketing, Brisbane.

The letter points out the severe effect of depressed conditions throughout the world. Exchange, too, has fluctuated violently. Before any satisfactory development of trade between Australia and China, adequate banking facilities, at present lacking must be supplied. The lessened outside value of the Australian pound should be a stimulus to trade. In British Malaya Australia was getting her full share of the trade, America and Australia supplying in approximately equal proportions: the combined trade in fresh fruits amounted to £110,000 yearly. In Java we also had a reasonable percentage of the trade.

Continuing, Mr. Ranger states: "In Hong Kong and China, however, Australia's proportion is quite inadequate. In 1929, China imported nearly £120,000 worth of Apples. These were chiefly from Korea and Japan, but U.S.A. and Canada supplied approximately £30,000 worth. We can reasonably expect to obtain a fair share of this trade, particularly as our season is opposite from the other countries supplying, and Chinese local fruits are then out of season.

"The trade in Grapes and Plums with China is not of large dimensions, but some business can be done.

"Shanghai is the great port of China, and the direct service from Australia now provided by the E. & A. Line will be of immense help. The Philippines should be a natural market for Australian fruits. The value of the trade is evidenced by the fact that Manila takes more fruit from California than the rest of the East combined. Yet the journey from Australia is shorter and the seasons are opposite. The difficulty lies in the quarantine regulations, and these at present effectively bar our fruits. It is believed that these can be modified to permit the entry of our fruits if proper representations are made by the Commonwealth Government. It is very desirable that such representations be made as early as possible."

* * * * *

The detailed report is in course of preparation.

Western Australia.

W.A. FRUIT SHIPMENTS.

Advice is to hand from the Secretary of the W.A. Fruit Shippers' Committee (Mr. C. H. Merry) that it is expected to ship the following quantities of fruit from Western Australia during the coming season:—

Apples	425,000 cases
Pears	10,000 ,,
Grapes	15,000 ,,

By far the greater part of this fruit will be shipped from Fremantle, as owing to the ravages of thrips in the Mount Barker district, the crop there has been practically a total failure.

Dry Season in South-West.

Some Orchards Carrying 1,000 Bushels to the Acre.

Mr. Godfrey Hester, of Hester's Hills, via Bridgetown, W.A., writes as follows under date February 14:—

We are having one of the driest seasons in the South-West of W.A. we have ever known, scarcely a drop of rain for the past three months, but, fortunately for the fruitgrowers, this year they have given particular attention to the cultivation of the orchards, as well as to the spraying. Unless we had got our cultivation in perfect condition and kept it so, half our crops would have been too small to export.

As it is, the dry weather has delayed our picking some two weeks or so, and the color on the fruit is still very backward, and a good many varieties are still very small, such as Doherty, Yates, Jonathan and Rokewood.

An inch of rain would make a difference of tens of thousands in helping to increase the size of the fruit.

1,000 Bushels to the Acre.

We have a most wonderful crop of Apples in this district. I was told that one of my neighbors, a Mr. C. Bond, on the Blackwood River, near Bridgetown, had a crop of about 1,000 cases to the acre on nine acres. Could not believe it, so went to verify, and found it quite true, and I should say even more, for many of the Cleos. and Dunn's are carrying 22 and 23 cases to the tree.

Nearly all growers have sold the whole of their crops to the buyers at from 7/- to 8/- per case on rails, so have done well so far.

DRIED FRUITS.

At a meeting of the W.A. Dried Fruits Board in January, there were present: Messrs. F. W. Davies (Chairman), A. D. Doig, R. Howie, R. J. Lowson, G. M. Brown and E. H. Rosman (Secretary).

It was deemed inadvisable to send "buck" Currants to London, as their presence might prejudice the sale of other Currants.

In reply to Mr. W. Davies, of Maida Vale, who suggested that payment should be made according to grade and not by flat rate, it was decided to advise that payments according to quality would be made from at least three packing sheds this season,

NEW SOUTH WALES

News and Notes

(By Our Correspondent.)

THE FRUIT FLY is apparently on the increase in the districts around Sydney. Orchard Inspectors have been instructed by the Department to compel growers to abide by the regulations, which include destroying infected fruit and orchard sanitation.

Poison baits and lures are being used successfully by the careful growers: there are, however, many careless growers and "backyard" orchardists whose trees are a menace. In one area Peach trees growing along roadsides and in ditches are being cut down, the municipal council co-operating.

* * * * *

Prune growers at Young were in a serious plight owing to the Government Savings Bank refusing to finance the local co-operative association's activities. A crisis developed about February 20, when all connected with the co-op. had to gather in every available sixpence to pay the wages. The crop is a record one—about 900 tons of dried fruit. Heavy expenses were incurred in harvesting and handling prior to dehydration, and when an additional £6,000 would have seen the operations through, the bank advised they could not grant the extra accommodation because of the uncertain financial situation. Deputations waited on the State Premier (Mr. Lang), and negotiations were opened with the Commonwealth Bank for the required finance.

Later.—The necessary finance has been arranged.

* * * * *

IN THE MURRUMBIDGEE Irrigation Areas, Prune growers connected with the Yanco, Griffith and Irrigation Co-operative Societies, requested the Minister for Agriculture, Mr. Dunn to advance £10,000 for processing Prunes. Mr. Dunn said that although it was difficult to get money from the Government at the present time he would do his best, in view of the good records of the societies concerned.

* * * * *

CASTLE HILL had a first-rate fruit show on February 13. The Apple exhibits were of outstanding merit. The high quality of the Jonathans was particularly pleasing there was keen competition in all classes.

Amongst the fruit shown were Plums (Satsuma, President, etc.); Peaches (Elberta and Clingstones); Apples (Jonathan, R.B., G.S., Cleo., etc.); Pears (Packham, W.B.C., Marie Louise); Oranges (Parramatta, Val., Joppa), Mandarins, Citrons, Lemons (Lisbon, Eureka), also Passionfruit, Persimmons, Quinces, etc.

The principal prize-winners were:—E. W. Moulds, W. J. Fagan, C. Roughley, H. Reid, G. E. Black, J. C. Miller, M. McInerney, H. G. Moore, R. C. Somerville, R. Shinfield, E. E. Gilbert, R. Gillison, A. J. Longley, S. E. Allen, H. Shonk, S. M. C. Black, and S. W. Frankish.

* * * * *

WYONG also had a successful show. Here were shown a splendid collection of citrus (Valencia Oranges, Lemons and cured Lemons); Apples (Jonathan, G.S., etc.); Pears (Kieffer, China, Packham), and a nice lot of Grapes, Figs, Quinces, Tomatoes, etc. Among the principal prize-winners were C. G. Stimson, C. P. James, F. C. Fripp, F. Whatman, C. E. Smith, W. Hinde, G. Trigg, Mrs. A. Adams, L. T. Bray, E. J. Morton, Mrs. E. Christensen and D. H. Smith.

ORCHARD REGISTRATION FEES are coming in very slowly. By mid-February only 8,400 out of 20,000 had paid. A notice has been issued that unless payment be made by February 28, there would be penalties.

* * * * *

SPRAYING WITH BORDEAUX, 3-9-50 at the Hawkesbury Agricultural College, had the effect of controlling the freckling of Peaches, Nectarines and Apricots this season: first spray, when buds swelling; second, when blossoms showed pink.

N.S.W. FRUITGROWERS' FEDERATION.

A meeting of the Board of the N.S.W. Fruitgrowers' Federation was held at Sydney on February 6.

There were present:—General J. Heane (in the chair), Messrs. H. G. Such (Griffith), F. D. Inman (Leeton), T. A. Tester (Young), A. E. Herring (Batlow), A. U. Tonking, W. J. I. Nancarrow (Orange), Bert Moore (Gosford), R. Hill (Narara), Alex Smith (Freeman's Reach), J. Neil (Glenorie), W. W. Challis (Kentucky), A. J. Taylor (Singleton), P. S. Macdermott (Market Representative), and E. E. Herrod (Secretary).

Hail Insurance.—Reports indicated the difficulties of securing a policy profitable to the companies while protecting the growers; enquiries are being continued.

Central Citrus Association.—The President reported that the C.C.A. had ceased active operations owing to the withdrawal of the packing houses on the M.I.A. Pending a definite policy the Federation was carrying on any necessary work. The President General Heane was appointed to represent N.S.W. on the Federal Citrus Council.

It was also decided to convene a conference of citrus growers in the various districts to consider any action that may be desired in regard to the formation of a Citrus Association.

Apple and Pear Export Council.—Arising from the above-mentioned report, the question of any action to be taken by the Federation in connection with the proposed formation of an Apple and Pear Export Council was considered. Owing to the difficulties confronting exporters of Apples and Pears, many of which could be solved by the existence of a Federal Organisation, it was decided by the Melbourne Conference to recommend the formation of an Australian Apple and Pear Export Council. The objects of the Council would be to improve all matters connected with the export of fruit.

Citrus Preservative Processes.—Reports of two experiments were received by the Board. One carried out in the Gosford Packing House to ascertain what improvement could be effected in the keeping quality of citrus fruits by subjecting the fruit to a current of dry hot air.

A further experiment designed on lines which have been conducted by the Department of Agriculture over the last five years and shown to be effective in retarding decay in Oranges is being conducted by the Department of Agriculture with the fruit of a number of growers in the Gosford district. This fruit has been treated with different solutions and has been in cool store in Sydney since November.

Farm Produce Agents Act.—The President reported that the Government was favorable to effecting the desired amendments during the present session.

It was reported that agents were charging varying rates of commission for nuts, these not being included under the scope of the Act. Cases were mentioned of growers having been charged 20 per cent. commission thus necessitating the Federation taking action to include nuts under the Act.

Large Arrivals of Interstate Fruit.—Reference was made to the tremendous quantity of interstate fruit, particularly from Victoria reaching the Sydney market, resulting in a serious lowering of prices. It was also stated that canneries were not operating to their usual extent on local fruit, as they were purchasing the bulk of their requirements in the southern States.

Jam in Unlabelled Tins.—In addition it was reported that large quantities of jam in unlabelled tins was being brought from the other States and labelled in N.S.W., and that such jam was being used by storekeepers in connection with the dole. As the dole tickets specifically state that N.S.W. jam must be supplied the Board is taking action to safeguard the position and is making a general appeal also to support the local growers by buying local fruit where possible.

COMING CITRUS CROP IN N.S.W.

Estimated Yields of Season 1931/32.

DURING February, fruit inspectors of the Department of Agriculture and crop correspondents associated with the State Marketing Bureau, have supplied the Director of Marketing with returns comprising estimates of the prospective average yields, on a per tree basis, in their respective districts and localities, of the main crop citrus fruits mentioned hereunder. Analysis of these returns suggests that the total citrus crops in sight in New South Wales should reach the following figures, viz.:—

	Bushels.	Bushels.
Oranges—		
Navels	677,483	
Valencias	846,319	
Common and other	484,645	
Total (Oranges		2,008,447
Mandarins		502,123
Lemons		424,425
Grand total (bushels)		2,934,995

Comparison With Last Season.

Commenting on the foregoing, the Director of Marketing, Mr. A. A. Watson, writes:—

Regarding comparison with last season's crop, the prospective crop of Navels indicates that a slightly improved yield may be expected.

Valencias are not showing favorably on the Irrigation Area, the crop in that centre is below average, and prospects generally are for a lighter yield than that of last season.

Common and other Oranges are estimated to give a yield approximately 100,000 bushels in excess of the previous crop.

Mandarins have set patchily in most centres, and yield prospects are for a much lighter crop.

Lemon crops appear to be favorable to good yields generally.

SELECTED CITRUS BUDS IN N.S.W.

The Co-operative Bud Selection Society Ltd.

FOR SOME YEARS it has been recognised that in most citrus groves there are trees that rarely produce sufficient fruits to be payable, whilst other trees are more constant producers of good quality and payable crops, so that with the view to enabling nurserymen to supply trees of the most productive and remunerative standards to planters, the above Society was formed under the aegis of the Department of Agriculture, and consists of representative fruitgrowers and nurserymen.

The Society does not and cannot make profits, but merely exists to improve the fruitgrowing industry by making available for budding selected buds from special trees of the best types of quality fruit and of reputed good bearing habits only. Trees from such buds should undoubtedly be more profitable ant appeal to all progressive orchardists.

The Co-operative Bud Selection Society Ltd., supplied the following selected Orange buds to nurserymen during the 1930 budding season, trees from which should be available for planting during the 1931 planting season:—

	Buds of Washington Navel.	Buds of Late Valencia.
T. Adamson, Ermington	3,000	3,000
W. Beck, Epping	1,000	1,000
A. T. Eyles, Rydalmere	3,000	2,000
J. de Freitas, Fairfield	200	200
R. Hughes, Ermington	1,000	1,000
L. P. Rosen & Son, Carlingford	5,000	1,200
B. E. Yarnall, Ourimbah	100	100

—C. G. Savage, Director of Fruit Culture, in "Agricultural Gazette of N.S.W."

PUTTING THE "WIND UP" THE STARLINGS.

Can Clear Them off M.I.A. in Six Weeks says Mr. Mervyn Webb.

The Secretary of the Leeton Gun Club (Mr. Mervyn Webb), who has found a better way of catching starlings than the old-fashioned method of putting salt on their tails, says confidently that he can clear the area of these pests in six weeks Mr. Webb has been waging war on these birds for some time, with very good results. In a night raid on Fivebough Swamp recently he netted 392, and at Yanco 102 went into the bag.

Mr. Webb says the starling is a "very windy bird," and a little harassing will drive right off the area those which escape the net. After being attacked in one place, he says, the starling will not return to it.

It would be impossible to estimate the number of starlings on the area, but to do so one would have to think in hundreds of thousands. These birds are a source of great annoyance to fruit growers, and it would be worth something to get rid of them. The matter of assisting Mr. Webb in his campaign of extermination is to be considered by the next meeting of the Leeton branch of the Fruitgrowers' Federation. In the meantime, Mr. Webb will quietly go on with the war. There is a good market with starlings with the Gun Clubs, these birds being quite as good as pigeons.—"Murrumbidgee Irrigator."

DEVELOPMENT IN ORANGES.

AN article on the "Development in Oranges," by Mr. J. D. Bryden, Riverina Welfare Farm, Yanco, was published in a recent issue of the "Agricultural Gazette of N.S.W." A graph and several statistical tables are included. The general conclusions were as follows:—

It is probable that the quantity of crop has some slight bearing on the size of Oranges produced by individual trees in any given year, but this does not explain the difference in general size of fruits in districts where a similar percentage of setting is obtained. In this particular work the crops borne by the trees under observation were similar as regards quantity each year, so that it was unnecessary to take this factor into consideration.

The data collected during the two years would seem to indicate that the

amount of moisture available

to the trees is the most important factor influencing size of Oranges over any given period of development, or during the whole of the growing season. Information obtained in 1929, when the soil moisture content varied considerably, shows definite correlation between this factor and the size of fruits produced. Soil moisture, in turn, is controlled by a number of agents, such as rainfall, temperature, and wind, also by cultural operations and by irrigation. In areas where water can be supplied by irrigation it is usually possible to maintain a fairly even soil moisture content, and this probably accounts for the more stable size of fruit produced under irrigation conditions.

In 1928 the surface foliage fruits of both Navels and Valencias were larger, but in 1929 the reverse was the case with both varieties. It is difficult at the present time to determine the cause of this, as sufficient information is not available to allow an opinion to be formed. It is considered likely, however, that the very large quantities of water available, due to an abnormally high rainfall during the period of early development in the 1927-28 season, as compared with only moderate quantities, most of which was supplied by irrigation, during the same months of the 1928-29 season, are in some way responsible for the reverse positions of the different groups as regards size.

From the information obtained it would appear that the conditions prevailing immediately after setting determine the size of inner foliage fruits as compared with fruits on the surface foliage. It was found that during the period when measurements were taken in connection with this investigation, the rate of growth was similar on fruits of one tree, so that whatever the cause which determines the difference in size between inner and surface fruits, the influence must be exerted prior to the dates when measuring was commenced.

Further study along the lines of this investigation, to investigate thoroughly each particular cause that could influence size of Oranges in any year is necessary before definite conclusions can be arrived at. It is considered, however, that soil moisture is the most important factor to be dealt with, and this will necessitate a good deal of work being carried out over a period of years, so that the relation between size of Oranges and various combinations of the conditions controlling soil moisture can be determined.

That this variation in size can be entriely eliminated is highly improbable, as a number of the conditions, apparently responsible, are beyond control. It could, however, be minimised to a greater or less degree by the thorough application of sound cultural practices, and it is probable that when the investigations are complete the recommendations for any control thought possible, will consist of suggestions regarding cultural operations, such as subsoiling, ploughing, cultivating, soil improvement, and humus and weed control.

ORCHARD CULTIVATION.

Important for Blossom Bud Development.

NOW IS THE TIME of the year when fruit trees are forming blossom buds for the following season, and every possible means should therefore be taken to make conditions for the trees as nearly ideal as possible, states the N.S.W. Department of Agriculture. The soil around the trees should be maintained in an open, loose condition, as this assists in conserving soil moisture.

Some fruitgrowers who complete their ploughing, and who cultivate efficiently during the first couple of months of the tree's growth, make the great mistake of not continuing with the cultivation well into the season. The drain upon the tree's vitality must be kept in mind and measures taken to keep the tree in the best possible condition to withstand that strain.

The tree has to

develop blossom buds

and bring to maturity—such is the grower's hope—a bountiful crop of good fruit. As blossom bud development takes place towards the end of the growing season, it will be seen that if the ground is allowed to harden and weed growth is unchecked the soil will become deficient in moisture at a time when it is particularly needed.

This drawback is rendered much more serious in its effects if the season is dry, and if insect pests and fungous diseases affect the tree's vitality.

It is

lack of soil moisture

that is frequently responsible for the alternate cropping of fruit trees, i.e., a good crop one season followed by a light crop the next season. It is not unusual for a tree, after carrying a heavy crop during one season, to fail to develop many blossom buds the next season, or after blossoming well to fail to set a good crop on account of bud weakness.

A large proportion of the varieties of the fruit grown, especially Apples and Pears, are late-maturing kinds, which, of course, carry their fruit late into the season. The strain of blossom bud development is naturally greater in the case of the trees indicated than in the case of trees whose fruit matures and is picked earlier in the season.

REMEMBERING BY RHYMES.

"Be sure," said Brown, to look up my friend, Mr. Lummack, while in the city."

"Mr. Lummack?" asked his friend absentmindedly.

"Yes, Mr. Lummack. You can remember his name because it rhymes with stomach."

A few weeks later his friend returned and encountered Brown on the street. "Do you know," he said, "I tried and tried, but never could find your friend, Mr. Kelly."

Queensland.

Citrus Crops.

DURING THE SPRING months the effect of dry weather conditions adversely affected some of the citrus-growing districts—principally those supplying local markets. Others, from which practically all the fruit sent south is drawn, have not suffered to any appreciable extent, and it is expected that both quantity and quality will be up to the average.

In the Redlands area the droughty conditions were more pronounced, and following upon a recent superabundant rainfall, the trees have made phenomenal young growth and again burst into flower. Irrigated orchards, which are comparatively very few, have an excellent showing of fruit.

A matter of concern to citrus growers is the fixation of a maturity standard. The growers' representatives recently met the Agricultural Chemist (Mr. J. C. Brunnich), who has given much attention to the matter. He submitted much tabulated detail in respect of numerous tests conducted, extending over several months, and in which the citric acid contents of the juice treated varied from .32 to 4 per cent., the latter being from obviously immature fruit. He pointed out the difficulties which were encountered in other countries in the fixation of a maturity standard, and a suggestion that samples of fruit taken from the same tree or trees be submitted throughout the coming season from the various districts was accepted.

Citrus generally have received a fair share of official cognisance during recent years, a special officer being detailed for the purpose. Tests of various features have been conducted, or are in progress.

It has been found that fertilising with nitrogen alone does not give nearly the same result as the application of a complete fertiliser, varied slightly according to soil conditions.

Selection of types for propagation has been sufficiently advanced for the establishment of a plot for supplying budwood to the State nurserymen. Investigation regarding pest and disease control is being continued. The results, where conducted in connection with fertilising and soil treatment, have been most satisfactory.

The deciduous fruit

is now more than half completed. The crop has not been heavy, but the quality is much above the average, and particularly free from pests and diseases. The benefit of the elimination of deserted and diseased and neglected orchards is reflected in the season's output.

Grapes of excellent quality from the Stanthorpe district have been plentiful. Various muscats predominate, and in view of the heavy supplies, cool storing is being considered, but unfortunately the softer varieties, though no doubt of better flavor, cannot on account of their nature, compare with the firm fleshed types for this purpose.

Rockhampton.

Although there are a number of fruit farms in the vicinity of Rockhampton, this cannot be classed as a fruit-growing district.

There are a number of Banana farms on the coast, and in some of the scrub soil districts round about and these turn out a good class of fruit.

Pineapples, mainly rough-leaved, are grown in fair quantities and the quality usually is very good.

Mandarins thrive exceptionally well, and the best fruit we have seen or tasted is that produced in this district.

Papaws, Passion Fruit, Grapes, Mangoes, as well as other fruits do well here, and are all grown in commercial quantities, but the consumption is mainly local.

The principal lines sent south are Oranges, Bananas, and Pines. Bondoola Oranges figured in the Melbourne reports of early Oranges this past season, and doubtless some of the Central Queensland brands of Bananas are well known.

Orchard Fruit Supplies, wholesale fruit merchants, Rockhampton, who supplied the foregoing notes, continue thus:—

Our own premises, which, being situated on the Market Reserve, are City Council property, are being extended. The past season for us has meant an extension of business. We have handled a lot of Victorian and N.S.W. fruit, mainly Apples, Pears, Late Valencia Oranges and Lemons.

There is a good market here for the fruits named, and we are looking forward to increased business with these in the coming year.

The Stanthorpe Show.

GREAT CREDIT is due to producers and all connected with the Stanthorpe Agricultural Society for the magnificent display provided at this years' Stanthorpe Show.

The effort was all the more creditable because staged during the worst depression that Australia has known.

For fifty years this Society has conducted shows, but on no occasion was there a better display than the 1931 Stanthorpe Show. The one drawback was the bad weather affecting the attendance, leaving a debit balance.

There was a full display of agricultural products.

The fruit was of outstanding merit, Mr. Fred Chilton, of Sydney, who has acted as judge for many years, spoke in terms of high praise of the quality of the fruit displayed. There were three magnificent pyramids of Apples, Mr. J. P. Halloran winning the prize, with Mr. D. Gow, a good second. For the champion case of Apples, Mr. Albert Chapman was successful; six cases of export Apples, Fry Bros., The Summit; four cases Apples, R. G. Wells first, Fry Bros. second; two cases Apples, wrapped and packed for export, D. Gow first; for single case of Apples packed in Canadian standard case, A. H. Paget came first.

The tray section was well contested, the principal varieties being Jonathan and Granny Smith.

Mr. R. Smith, who was very successful in the Apple (tray) section, won the prize for the champion case of Peaches. The Plums, too, were of high quality.

The Department of Agriculture had a comprehensive and educational display, not only of fruit, but of insect friends and foes of the orchardist. Mr. Jas. H. Gregory, Government Packing Instructor, gave packing demonstrations; Mr. H. S. Pratt showed grafting methods.

The show was opened by the State Governor, Sir John Goodwin, who was introduced by the President, Col. F. G. Newton.

Stanthorpe, 21/2/31.

Most of the Apples are now finished—only a few Jonathans left. The harvest of Granny Smith is now being marketed, there being a good crop of this variety. Granny Smith is undoubtedly the best Apple in the granite belt —as fine an Apple as could be grown anywhere. Furthermore, the fruit is free of black spot—and this is an asset.

Seasonal operations at the local packing house are in full swing.

A recent estimate gives the quantity of fruit and vegetables despatched from the granite belt (Stanthorpe and district) during 1929-30, at 20,000 tons, the value being set down at £250,000.

TRADE WITH THE EAST.

Queensland Sends Apples, Grapes, Etc.

QUEENSLAND FRUITS for Eastern ports per the ss. "Niew Holland," at the end of February, included 2,000 cases of Granny Smiths from the Granite belt, 200 cases Grapes, 100 cases Plums, also some Pears and Peaches.

The next boat, early in March, will take 4,000 or 5,000 cases.

The Grapes are being sent as an experiment by the Producers' Distributing Society. On the success of the trial, big developments are expected.

The Queensland Grape Growers' Association is endeavoring to open an export market for Grapes in Canada, Muscats, Waltham Cross and Malagas will be sent.

The opening of these export markets is viewed with the liveliest satisfaction by growers and all concerned.

QUEENSLAND FRUIT IN SYDNEY.

Sydney (19/2/31).

Mr. P. S. Chinn, representative in Sydney of the Committee of Direction of Fruit Marketing, advises as follows:—

The quantity of Queensland fruit received in Sydney during the past month amounted to 1,245 tons, consisting of Bananas, Pineapples, Passion Fruit, Papaws, Apples, and Tomatoes.

During the recent floods in Queensland supplies were very short, and the market was in consequence somewhat disturbed, Banana prices, in particular, went up to pre-depression levels, but as soon as supplies came through from both Queensland and the Northern Rivers, N.S.W., the market quickly dropped back to normal, and with very heavy supplies since coming forward the market has eased further.

The general quality of Bananas is fair, but recently the weather has been very humid in Sydney, and Bananas are not keeping well.

Pineapples have been in heavy supply, and, as usual at this time of the year, water blister is prevalent.

Papaws and Passion Fruit have been in very short supply, this being the off season for Papaws, and Passion Fruit is supplied from local N.S.W. sources.

A few consignments of Queensland (Stanthorpe district) Apples have been on the market, mostly Gravensteins and early Jonathans; the quality generally has been good and a fair market has been met.

Tomatoes are also on the market from the Stanthorpe district, but the supply from local sources has been fairly heavy, and, in addition, fairly large consignments have been coming forward from the Goulburn Valley (Victoria) district, and prices generally have been unsatisfactory to growers.

EXPORTS TO UNITED KINGDOM.

London.—In a letter received from Messrs. Ridley & Houlding, fruit brokers and commission agents, Russell-street, Covent Garden, London, England, the following is stated:—

"Too much importance cannot be attached to the advice given to growers to see that only the best fruit is sent to the European markets. There are very few outlets for second-grade or inferior quality fruit. It is far better for the inferior quality fruit to be disposed of in the local market. For dessert varieties we strongly recommend sizes 2¼ in. and 2½ in., and for cooking varieties 2½ in. and 3 in. Cox's Orange Pippins of sizes 2 in. and 2¼ in. are most suitable for export, as they stand the journey very well.

"We do not recommend heavy shipments of Apples late in the season. The quantity to be shipped should be curtailed considerably after the end of May, as any shipments after that date only clash with the soft fruit season, when the demand for Apples falls off considerably. English early dessert Apples also make their appearance on the markets of the United Kingdom early in August, and shippers will be well advised to arrange for shipments to cease after about the end of May. If any later shipments are made they should only be of very small quantities, and specially selected fruit."

Messrs. Swane Bros., Enterprise Nursery, Ermington, N.S.W., are advertising citrus trees in this issue. Their advertisement states that their citrus trees are grown in virgin soil, and each year planters can rely on getting quality trees at a moderate cost.

**Do not run any Financial Risk with your Fruit
but Consign it to**

HEDLEY GEEVES LIMITED

Telegraphic Address:
"Apples, Brisbane."
(Hedley Geeves, Managing Director)
Registered Shipping No. 6.

FRUIT EXCHANGE——BRISBANE

SELECTED AGENTS FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

Fruitgrowers' Cool Stores Association of Victoria.

Important Quarterly Meeting.

THE QUARTERLY MEETING of the Fruitgrowers' Cool Stores Association of Victoria, was held at Melbourne on February 17.

There were present: Messrs. G. F. Fankhauser (Burwood East), H. L. Tomkins and R. Langley (Croydon), R. M. Finlay (Diamond Creek), J. H. Lang (Harcourt), Frank Petty (orchardists), T. W. White (Somerville), F. Stockton (Tyabb), F. J. Byrne and C. Wallace (Wantirna), A. E. Hocking, E. H. Hatfield and W. Lipscombe (private stores), and J. G. Aird (Ringwood), Secretary.

Fruit Preservation.

The President, Mr. A. E. Hocking, reported having, together with the Secretary, interviewed the China Indent Coy. re their patent for fruit preservation. This was not applicable to deciduous fruits, the principle being that citrus fruit was stored at certain temperatures, after which the juice was extracted, placed in containers and cool stored for future use.

Cold Storage Chambers.

Correspondence was received from Tyabb, referring to the formula for fumigating storage chambers, which went forward to stores with the minutes of the last meeting, pointing out the risk of scalding, should the person using or mixing it allow the mixture to come into contact with any part of the body.

It was resolved that Mr. G. B. Tindale be asked to set out a summary of his talk at last meeting on "Mould in Cool Storage Chambers," for circulation amongst the stores.

Affiliation Fees.

The President reported having, together with the Secretary and Mr. T. W. White, of Somerville, visited the Directors of the cool stores on the Peninsula, making representations and asking that they retain their affiliation with the Association. They had been favorably received, the result being that Tyabb had forwarded their cheque for affiliation.

Negotiations with other stores were taking place. It was agreed that differential rates could not be made, also that the Burnley Conference had agreed that the fees fixed were the lowest possible to run the Association.

Cold Storage Research.

Mr. F. M. Read, of the Department of Agriculture, attended by request and addressed the meeting on the work being undertaken by the East Malling Research Station. The information given was of a very useful and instructive nature. A hearty vote of thanks was accorded.

It was decided to write to the East Malling Research Station, asking the terms of affiliation.

Secondhand Cases.

At the instance of Harcourt, the regulations governing the use of secondhand cases was discussed, the concensus of opinion being that the regulations now in force could be very harsh and irritating when administered by an unsympathetic Inspector.

The Secretary was instructed to advise the Superintendent of Horticulture that this Association is of the opinion that the regulations dealing with the use of secondhand cases requires amendment, because a grower having his own cases returned would be required to remove his own brand and marks before re-packing fruit for market to strictly conform with the present regulations.

Victorian Fruit Council.

The President reported that the round table conference

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convened by the Cool Stores' Association of the sectional interests of the industry, gave promise of successful results. A further meeting had been arranged to draft a constitution for the formation of a Fruit Council, at which two delegates from all welfare associations connected with the industry, were invited.

The report was adopted, and delegates thanked.

Annual Conference—Blackburn—May.

The alteration of meeting date and location of the next annual conference of the Association were discussed at length. Batlow (N.S.W.) Cool Store extended an invitation to hold the conference there, an invitation was also received from Blackburn. A number of delegates expressed a desire to go to Batlow, but taking into consideration the present financial stringency, together with the light attendance at the meeting, a doubt was expressed whether sufficient delegates would make the trip to ensure a successful conference.

It was resolved that, subject to the approval and invitation of the directors of the Batlow Cool Stores, the advisability of holding the 1932 Conference at Batlow be discussed at the coming Conference.

Affiliated stores were asked to send items for the agenda paper promptly: the Premier (Mr. Hogan) to be asked to open the Conference; decided that a discussion on pollination be arranged at the Conference.

Farmers' Convention.

Delegates appointed were Messrs. A. E. Hocking, J. H. Lang, E. H. Hatfield, G. F. Fankhauser, W. Lipscombe, and J. G. Aird (Secretary).

Bulk Purchases of Ammonia.

The Secretary was instructed to enquire as to the possibility of arranging for bulk purchases of ammonia by the Association, and report to Harcourt.

Price Cutting.

A resolution was adopted: "That in view of representations made to this Association that overtures were being made by shareholders of various stores to shareholders of other stores outside their own districts, offering cut rates for storage this season. This Association considers it is in the best interests of cool stores for growers to loyally support their own stores.

ALTERNATE CROPPING OF FRUIT TREES.

To the Editor, "Fruit World."

Sir,—You have asked my opinion on the subject of alternate cropping of Apple trees. I reply with a certain reluctance, as I am always hesitant to give an opinion when the evidence is still inconclusive. However, I shall give a few observations, but first it must be understood that the experience of the last few years is so out of the ordinary that it cannot be cited as evidence; we must confine ourselves to more regular periods.

Now, with many varieties of Apples, regular cropping is easily maintained. The best known of these are, in our district, Jonathan, Yates and Rome Beauty. An example of the other extreme is Rymer, and to gain some knowledge of the subject, comparisons should be made. These show that the outstanding differences are:—

(1) That the regular cropping varieties will blossom and set fruit at times on comparatively immature buds: every grower knows that the young shoots of the Jonathan often carry a heavy crop.

(2) That some trees produce shoots more freely than others—compare a Jonathan and a Rymer, especially after a heavy season.

Now the certainty is that fruit buds form more freely on young wood than on old; this is very apparent in the season following a heavy cropping.

The reasoning, then, seems to be:—

Keep the tree growing well and retain each season a supply of young wood, so that the tree will be continuously replenished. However young shoots differ in character, some are vegetative, some are reproductive, i.e., some are pre-disposed to grow foliage and new shoots, whilst others set and mature fruit buds. These can be distinguished very easily—the fruitful shoot is stouter in proportion to its length than the other.

Unfortunately, our popular system of pruning teaches us either to cut out all or most of the young wood and to depend for fruiting on ancient spurs, or it prescribes cutting back the young shoot in such a way that it becomes stunted and its further growth is abnormal.

I believe that regular cropping depends, then, on the tree's vitality and on a rational system of pruning.

Stocks may, as the English scientists declare, have something to do with it, but the effect of stocks on tree growth has been studied too little in this country for us to be able to come to any conclusions.

It is doubtful if any system of pruning can change the character of a Rymer tree and make it bear annually. It is a tree that throws its whole vigor into fruiting one season and needs the next to recuperate—its average crop in the districts which suit it are perhaps equal to that of any other variety. It is on a tree of this nature that I should like to observe the effect of different stocks.

E. H. HATFIELD.

Tynong, Vic., 19/2/31.

Blackburn Cool Stores.—At the recent annual meeting, Cr. J. Stevens and Mr. F. Moore were re-elected for two years to the directorate of the Blackburn Cool Stores. The other director is Mr. A. J. Harris.

E. Burwood Cool Stores.—Mr. G. F. Fankhauser was recently elected Chairman of the Board of Management, the other directors being Messrs. Walter Mock and A. R. Fankhauser. The Secretary is Mr. G. C. Karnaghan.

Two of a Kind.

Dan: "Where are you off to, Ben?"

Ben: "I'm goin' to see the doctor. I don't like the look of my wife."

Dan: "I'll come wi' ye—I don't like the look o' mine either."

"Mother, won't you please speak to baby? He's sitting on the flypaper and there's a lot of flies waiting to get on."

Consign your Fruit to—

J. JAEGER

Telegrams: Jaegagento, London.

FRUIT IMPORTER

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and compare the results with those of the competition.

Try and See.

AGENTS REQUIRED.

SOUTH AUSTRALIA.

Over 30,000 Cases of Apples and Pears for Export.

A MEETING of the Committee of the South Australian Fruit Marketing Association was held on January 30 at Adelaide, Mr. H. J. Bishop presiding. There were also present: Messrs. M. G. Basey, E. W. Dearman, P. R. B. Searcy, G. Mack, F. B. James, H. N. Wicks, A. O. Peterson, R. H. Charlick, J. B. Randell, G. Selth, A. Filsell, R. O. Knappstein, A. V. Pitt, Mr. Green as proxy for Mr. G. A. W. Pope, and the Secretary (Mr. E. W. Mills).

Pear Shipments.—It was decided to make every effort to secure space for the full 9,400 case space applied for, shippers and growers having made all necessary arrangements. A reduction of freight on half cases from 2/3 to 2/- had been requested by the Association. Reports re Pear packages were being compiled, and would be made available to assist in deciding on a standard uniform pack.

It was decided to arrange in the future for shipping Duchess (Williams) Pears from Murray districts the last week in January, and from other districts the first week in February. Careful stacking by stevedores was requested.

Mr. H. N. Wicks suggested for future discussion, that the Association consider the advisability of having a representative in the ship's holds when fruit is being loaded.

Apple Crop.—It was considered the Apple export would not exceed 20,000 to 25,000 cases. Space was required for Hamburg for mid-March for 5,000 to 6,000 cases.

Murray Citrus Growers.

The Murray Citrus Growers' Co-operative Association (Australia) Ltd., is functioning satisfactorily.

The Association is preparing for an export programme for the coming season on a much larger scale than has previously been attempted.

District Committees are in existence at Waikerie, Renmark, Berri, Mypolonga, Murray View, Moorook and Kingston, Ramco, Cadell. The General Secretary is Mr. N. H. Underwood, A.I.I.S., Adelaide.

FRUIT EXPORT FROM SOUTH AUSTRALIA.

The Secretary of the South Australian Fruit Marketing Association sends the following information, under date February 10.

Pears.—2,700 half cases were shipped by the "Jervis Bay" and "Moldavia," on January 26 and 29 respectively. Space for 1,400 half cases was allocated in the "Naldera" for February 12, and 2,000 half cases in the "Balranald" on April 2, making a total of approximately 6,100 half cases.

The Association asked some time ago for space for 9,400 half cases, and considerable dissatisfaction exists amongst shippers with the curtailment of space. We have taken up the matter with the Overseas Shipping Representatives' Association asking them to make every endeavor to provide for an additional 3,000 to 4,000 half cases during March, as arrangements have already been made by shippers to obtain the necessary fruit.

Apples.—In regard to Apples nothing has been finalised yet, but we have advised the Overseas Shipping Representatives' Association that our forecast of the export will be from 20,000 to 25,000 cases.

Space is particularly required in March for 5,000 to 6,000 cases for Hamburg. If this is unobtainable, the total export will probably be under 20,000 cases.

ORCHARD SIDELINE.

Cows and Pigs are Recommended.

COWS AND PIGS as orchard sidelines were recommended by Mr. J. Boehm at a recent meeting of the Ramco (South Australia) branch of the Agricultural Bureau. Mr. Boehm stated:—

"Cows are a necessity on the orchard, especially where there are small children. If £10 to £12 is available for the purchase of a cow, select a good young animal. If a family of about six or seven buys milk and butter it would cost about 11/- or 12/- per week, so that in about five or six months the cow would be paid for. A good cow which gives 5 galls. to 6 galls. of milk a day, pays for herself in a short time. A cow giving on an average of 3 galls. per day would keep a family, as mentioned above, going for ten months at least. The value of milk and butter for the ten months would, at the present price, amount to £24. I have a cow which gave 8 galls. of milk per day when first in milk, and after 22 months still gave 2 galls. per day. People who object to the keeping of a cow on an orchard usually state that it is difficult to obtain food for the animal.

"Every orchardist has the opportunity of growing lucerne, which is the best feed for a milking cow. In winter, cocky chaff with a little bran is a good and cheap form of fodder. In good seasons cocky chaff can be bought very cheaply. The cost of chaff and bran at 3/6 per week are based on the keeping of my cow for 22 months—total for 22 months' feed, £8/8/-; cost of cow, £5; expenditure, £13/8/-. Income for 22 months: value of milk, £50/16/-; value of cow, £18; total, £68/16/-; credit balance, £55/8/-. With the separated milk pigs can be raised. Pigs are also very profitable. Twelve months ago I bought two small pigs at 12/- each. I kept them just 12 months and sold one at £5/5/-; the other I killed for home use. It weighed 240 lbs., which, at 6d. a pound amounts to £6. The pigs cost nothing to feed; all they received was milk and waste fruit, etc."

Such sidelines, continued the lecturer, were profitable where there were people to attend to them, but when one had all the work to do, then it could not be done satisfactorily. After working all day, one could not do such work. If cows were kept, then certainly pigs were almost a necessity, but he considered they were too far away from a market: he had not allowed for labor; if that were added, then profits were not so great.

Mr. R. Stanley said with children to help, cows and pigs were certainly a good sideline. A good cow kept in the yard and fed was a paying proposition and no trouble. He thought it might be profitable to buy a number of young pigs as suckers, put them into a Gordo vineyard, say one acre, and let the sucker do the picking. Would they not be worth more than Gordos at present?

At a later meeting the question was discussed: "Is it advisable to pull out Gordos to plant another variety?" Mr. F. Lewis said it was often stated that if vines did not produce two tons to the acre, root them out and plant lucerne; he did not agree with that. In his opinion Gordos at Ramco paid.

"A plot of half and acre of Currants was not much good; they were going out, though Apricots just above them were all right. A lot of chickweed grew amongst the vines. Is it advisable to pull out these Currants and plant anything else?" It was suggested that lime might be tried on the ground or it might be advisable to plant trees, say Apricots, as they seemed to do well.

"Would sheep interfere with Orange trees if shut in a grove?" One member said lambs would eat young shoots, but another had read an article advising the running of sheep, as they manured the soil and choked weeds.

"Which is more profitable—to put two acres of high land into wheat and oats or Sudan grass?" Mr. Lewis said oats could be sown early and the Sudan grass in October.—"S.A. Journal of Agriculture."

Cultivation in Relation to Vineyards.

Dealing Principally With Conservation of Moisture.

South Australian Experiences.

VINES THAT ARE CULTIVATED require cultivation for a variety of reasons, the main reason being that they are placed under natural conditions, consequently they have a keener struggle for existence—stated Mr. T. Sobels, before the Watervale Branch of the Agricultural Bureau recently. Continuing, Mr. Sobels stated:—

In a dry country, one of the chief difficulties is the absorption of a sufficient quantity of moisture. We are told that average plants will contain from 70 per cent. to 80 per cent. of water. Moisture is constantly evaporating through the leaves, and this loss has to be made up by other absorption.

It is estimated that to produce one ton of hay it requires approximately 250 tons of water, and 1 in. of rain represents 100 tons to the acre. Therefore, if no losses were to occur and the rain fell as required, a rainfall of about 2½in. would be sufficient.

Only about one-quarter of the rainfall is used by the plants, fully one-half is lost by evaporation, and the rest soaks away. Therefore our main object is to prevent as much of this evaporation as possible.

So far as cultivation is concerned, it may be divided into two parts.

Firstly, the storage in the soil of as much moisture as the rainfall will allow, and

Secondly, the prevention of the loss of this moisture as far as possible until the succeeding rainy season.

At the end of autumn

the soil has become more or less consolidated. Every operation after the bursting of the buds naturally tends to increase this.

Summer cultivation is shallow, simply a stirring of the surface, leaving it hard and solid below. Even sandy soils, as a rule, contain a certain per cent. of clay, tending to set them on the surface.

As soon as the rain falls in winter, the surface being hard, the greater percentage of water simply runs away, particularly on slopes, and even if level the water collects on the surface and much again evaporates without going any depth. If, however, the soil is broken up to get below the summer cultivation, the greater part of it soaks into the soil.

Therefore I would advise the breaking up of a vineyard as early as possible, according, of course, to the district and rainfall.

There is no doubt, however, that whatever precaution is taken the moisture that is in the soil must diminish.

Firstly, by evaporation, owing to rise in temperature as the summer advances.

Secondly, by the action of violent winds.

Thirdly, by the gradual heating of the soil by the direct rays of the sun; and

Fourthly, robbing of moisture by weeds and any other foreign growth. The latter, of course, we are able to deal with.

The action of cultivation

is not confined entirely to the storing of moisture, by the cultivation of the soil we force the plants to send their roots down deeper than they otherwise would do. Plants require an abundant supply of free oxygen, and soils which are not cultivated become rich in carbon di-oxide, owing to the respiration of root gases.

Scientists have told us that 10 per cent. of carbon di-oxide is contained in pasture land. This tends to cripple the plants and hinders their growth, hence breaking up of the soil exposes their lower layers and sets free the poisonous gas. Cultivation may be

divided into three stages,

viz., winter, spring, and summer. The winter cultivation is given as early as possible after the ground becomes ploughable, and is only necessary to the drier districts. Spring ploughing is mostly practised here, and should be of a good depth, varying from 4in. to 6in.

In trellised vines

the crown should be made in the centre of the rows, throwing the furrow away from the vines, plough as closely to the vines as possible, then the remaining land is taken away by the horse hoe. Later on this should be ploughed back, leaving a furrow in the centre of the rows, which is worked over by the use of the harrows and cultivator.

In bush vines

in this district only one ploughing has been found necessary, and that is to strike out or crown up one row, leaving the furrow on the next, the remaining land being taken away by the horse hoe. Each row is done every alternate year in this manner; one row is backed up and the other ploughed away, and so on.

Before summer cultivation I recommend the use of the harrow. This not only pulverises the surface, but assists the cultivator to do the work more throughly and lessens the wear and tear of implements. The number of times you cultivate in summer depends chiefly on weeds and the season.

Loosen up the soil after every rain where practical, to prevent as much evaporation as possible.

Summer cultivation places a loose layer on the surface, which sometimes encourages the growth of surface roots, but the deep winter or spring ploughing tends to destroy these, so the deeper one can force the roots of a vine down the better will they withstand droughty conditions, the small surface roots being of no value.

In an uncultivated soil much loss is due to capillarity. When a soil sets hard it forms a crust on the surface, and although the particles tend to cohere, you never obtain a perfectly compact mass. The soil is really perforated with a series of minute tubes connecting the lower strata of the soil with the atmosphere, and through these tubes the moisture is constantly rising and is lost by evaporation from the surface.

Breaking up the surface remedies this, and practically the only loss will then be by evaporation from the surface layers. Shallow cultivation in the summer, leaving a lower layer on the surface, acts in much the same way as a mulch.—"S.A. Journal of Agriculture."

Sulphate of Ammonia

WESTERN AUSTRALIAN TESTIMONY

Mr. S. E. Hambley, of Mount Barker, Western Australia, writes as follows:—

"I have an orchard composed of 900 apple trees, and two acres of mixed stone fruits. On these I make a practice of applying 2 lbs. per tree of Sulphate of Ammonia in conjunction with Super and Potash, and I have no hesitation in saying that the Sulphate of Ammonia is the most important portion of the fertilisers applied. Two acres of Dunn's Seedling, 1929 season, yielded 928 cases of Standard Export Fruit.

"I also use Sulphate of Ammonia on my oats, peas and kitchen garden crops, and the vigour and yield demonstrates always the value of this fertiliser.

"You are at liberty to use this letter as you feel disposed."

Evidently Mr. Hambley, like many primary producers throughout Australia, knows a good thing when he sees it, and is satisfied that ——

SULPHATE OF AMMONIA PAYS

Literature and Advice from:—

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360 Collins Street, Melbourne,
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CANNING PEACHES IN CALIFORNIA.

Growers Unite With Co-operative and Proprietary Canners in Crop Control Plan.

Good Results Achieved.

THE ANNUAL REPORT of the California Peach Growers' Association is just to hand. The report states that the year 1930 was one of outstanding achievement. Not in the sense of profitable returns, but in the sense that it has brought together the various segments of the Peach-growing and canning industry and made possible their working unitedly for their common interests. For the first time in the history of the industry, all factors—commercial canners, co-operative canners and growers—voluntarily joined in a successful crop curtailment plan. This plan called for limiting the pack to thirteen million cases—a reduction of six to seven million cases, or about 35 per cent.

A survey of the Peach crop revealed a probable 485,000 tons. This would yield a pack of 19,000,000 cases. It was therefore deemed imperative by all concerned to can not more than 13,000,000 cases.

Under the terms of the crop curtailment agreement, the basic price for Cling Peaches was set at 20 dollars per ton. All canners, including commercial and co-operative, participating in the plan agreed to pay to the Crop Control Committee the sum of 6.50 dollars per ton on each ton of Peaches canned to provide the necessary funds to purchase the surplus tonnage on the trees at the rate of 20 dollars per ton less harvesting costs of 7 dollars per ton, or a net price of 13 dollars per ton on the trees. It was estimated that the surplus thus to be purchased would be about 111,000 tons, but as the season progressed it was found that the Midsummer and Phillip varieties would produce larger crops than first anticipated, principally on account of the fruit being unusually free from defects; hence a larger portion of the crop was of deliverable quality. This made it necessary for the Crop Control Committee to purchase additional quantities of Peaches, thus increasing the surplus tonnage from 111,000 tons, as originally estimated, to 148,000 tons, the amount actually purchased, in order to hold the pack to 13,000,000 cases. This also made it necessary for the Committee to obtain more funds with which to pay for the additional tonnage purchased. These funds were obtained by assessing canners participating in the control agreement, thus increasing their pack obligation from 6.50 dollars per ton to 7.81 dollars per ton.

Membership in the Association now stands at 1,612 members, with 17,653 acres of Cling Peaches.

Over-production the Problem.

Concluding, the report states:—"Looking toward the future, the most perplexing problem confronting the industry is the serious one of over-production. The large plantings of Cling Peaches since 1921 have brought on production at a rate much more rapid than it has been possible to develop markets sufficiently to absorb the increased output. Based upon this season's production, the supply of Cling Peaches is fully 30 per cent. in excess of present market needs. It is essential to restore the proper balance between supply and demand before the Cling Peach industry can be placed on a profitable basis. It is true that during the past six years the demand for canned Cling Peaches has increased at a very remarkable rate.

"By the operation of a crop control plan this year the industry was saved from serious consequences and undoubtedly under normal crop conditions it will be necessary to continue crop control for the next year or two.

It should be recognised, however, that crop control is essentially

an emergency measure

devised to meet a temporary serious situation. It is not intended as a means to develop markets nor would it make the industry prosperous. The present condition of over-production can be remedied by the combination of increased market demand and reduced production.

There are many Peach orchards in all of the producing areas which all or in part have been planted on lands not especially suitable, whose production is very low or

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the trees have reached an age where production is rapidly diminishing and the quality deteriorating. Such orchards can not now or even under more favorable conditions, be operated profitably. It would seem that the owners of these orchards would be infinitely better off financially if the trees were removed from such orchards and the lands planted to crops or trees better adapted to the soil. Not only would the individual grower be benefited by the elimination of the unprofitable portion of his orchard, but it would also help to solve the problem of overproduction.

Your directors have long been in favor of and have for several years recommended that an industry programme of sales promotion and advertising be undertaken for the purpose of developing markets and increasing consumer demand for canned Peaches. This would supplement the splendid work that is now being done by the two large canning factors. The time is propitious for instituting such a programme, and we believe the industry generally would support a movement of this kind."

Victoria.

EXPORT FROM VICTORIA.

CONDITIONS with regard to the export of fresh fruit, particularly Apples and Pears, for this season, are unusual. The difficulties of arranging a programme of steamers suitable to the seasonal conditions and the maturity of the fruit have been found almost insurmountable; 80 per cent. of the crop is a fortnight to three weeks earlier than normal and as far as color and maturity are concerned, the fruit is in the condition of that shipped in April of last year.

In 1930 shippers experienced difficulty in fulfilling their contracts regarding the size of the fruit owing to the heavy crop and slow growth. This year the position has changed to the other extreme, namely—large sized fruit fully colored and matured ready long before sufficient space is available to ship the fruit overseas.

Visitations of hail and seasonal conditions have caused slight blemish in a fair percentage of the fruit, but even allowing for these blemishes the quality is exceedingly good, and the bulk of the fruit just now being packed as "plain" grade will be of better quality than the fruit which has usually been shipped as "standard" grade.

Inspection too Rigid.

The very rigid inspection which is being exercised, throughout Victoria at least, is having the effect of causing growers serious concern, and in many instances they are refusing to pack their fruit for export.

It is to be hoped that as the season advances a more reasonable view of the administration of the regulations will be observed, as the country can ill afford to have fruit of excellent quality and in sound, marketable condition, left behind when we so urgently need to ease the financial situation abroad.

* * * * *

German Market.

Another difficulty which has to be faced is that of the uncertainty in regard to increased duty which can be imposed by the German Government on or before the arrival of Australian Apples. We are unfortunate in Australia in not having already entered into a "favored nation" treaty with Germany.

In this matter, New Zealand and South Africa, who are our two chief competitors, have considerable advantage. At the time of writing the duties in favor of New Zealand show a difference of 1/3 per case, and the indications are that further additional duties will be placed against Australia.

These increases will not apply to the same extent to those countries which are operating under the "favored nation" clause.

EXPORT OF APPLES AND PEARS.

At this time of the year, when growers and exporters are busy with the preparation and shipment of Apples and Pears, many questions arise as to the requirements of the Commerce Act Regulations, with respect to grade standards, the branding of cases, and the correct methods of packing the fruit, etc.

The State Supervising Officer (Fruit) (Mr. Ward), notifies that the Department of Agriculture has issued a Bulletin entitled "The Export of Apples," which contains full and valuable information on matters connected with the requirements of the Commerce Act Regulations, which govern the export of Apples and Pears. This Bulletin may be obtained on application to the Department of Agriculture, Melbourne, C.3, price 5d., including postage.

RETAIL FRUITERERS' HOLIDAY.

Melbourne, March 11.

The Secretary of the Melbourne and Metropolitan Fruiterers' Association directs the attention of growers to the fact that March 11, has been gazetted a fruiterers' holiday, and no fruit can be sold in Melbourne or suburbs on that day. Growers are asked to regulate their consignments accordingly.

WEST DONCASTER COOL STORES.

Electrically driven machinery was installed in the West Doncaster Cool Stores early in February, in the presence of Mr. Werner (consulting engineer), Messrs. John Petty, John Tully, senr., Albert Tully (directors), and Mr. Jones, of Thomas Bros. The new installation is stated to be working well.

FIRE AT COOL STORE.

The Cool store of Mr. W. R. Jenkins, at Doncaster, was heavily damaged by fire early in February. Between 500 and 600 cases of fruit, mostly Peaches, were stored at the time of the fire. The building and contents were partially covered by insurance.

VICTORIAN FRUIT COUNCIL.

Useful Project Launched in Victoria.

THE need for a central council of Victorian fruit interests was expressed at a conference convened by the Cool Stores Association of Victoria.

The conference was held on February 10, at Melbourne. The Association represented being as follows:—Cool Stores Association, Victorian Jam and Canning Fruitgrowers' Association, Victorian Fruit Marketing Association, Southern Fruitgrowers' Association. An apology was received from the Victorian Central Citrus Association.

Mr. A. E. Hocking was elected Chairman and J. G. Aird, Secretary, pro tem.

A resolution was adopted affirming the desirability of creating a central council representing the various welfare organisations in the several sections of the fruit industry, with a view to co-ordinating action for the furtherance and protection of the industry.

It was decided to hold a further meeting on March 11, other welfare organisations not present that day to be invited, so that a constitution could be drafted.

VICTORIAN FRUIT MARKETING ASSOCIATION.

The monthly meeting of the Executive of the Victorian Fruit Marketing Association was held in Melbourne on February 18. There were present: Messrs. H. G. Colombie (President), E. I. Lawford, W. H. Carne, J. W. Bailey, W. A. Webb, J. B. Mills, F. R. Mellor, J. W. Barker, A. S. Harrison, C. J. Parnham, F. Cave, and the Secretary.

Apologies were received from Messrs. K. Eagle, G. Brown and C. H. Jost.

Research Committee.—Mr. A. G. Strickland, who attended on behalf of the Department of Agriculture presented a draft report on drainage, pruning, cultivation, manuring, and pollination in relation to biennial cropping—thus amplifying the report originally drawn up by Mr. J. W. Bailey. Mr. Strickland was thanked, and it was decided to circulate copies of the draft to members of the Committee for further consideration.

Jam and Canning Fruit Growers' Association.—Mr. W. J. Foster attended and applied for membership on behalf of the Jam & Canning Fruit Growers' Association. He said that through the restrictive operations of the Canned Fruit Control Board, much trade had been lost to Australia, and fruitgrowers had suffered unnecessary losses. Growers were now going in for the export of fresh Pears. The membership was accepted.

Duty on Oils.—It was decided to support the request that base oils—not produced in Australia—be admitted duty free.

Freight on Pears.—Decided to join with South Australia in the request that the freight on half cases of Pears be reduced from 2/3 to 2/-.

Price of Nails.—Regret was expressed that there had recently been a substantial increase in the price of nails following the withdrawal of the bounty. The meeting considered that the price should not be raised because of there being a monopoly in Australia, and it was decided to approach the Tariff Board on the subject.

SOUTHERN FRUITGROWERS' ASSOCIATION.

At the February meeting of the Southern (Victoria) Fruitgrowers' Association, there were present Messrs. L. Pepperell (President), G. Mock, W. A. Webb, W. A. Thiele, A. J. Leber, O. White and J. W. Aspinall (Secretary).

Fruit Sold From Barrows.

The report from Mr. G. Merritt, Fruit Inspector, revealed what large quantities of fruit could be disposed of under proper management.

Mr. W. A. Thiele was asked to represent the Association at further meetings of Primary Producers' Organisations called by the Town and Country Union.

Brown Rot.

It was decided to forward the following resolution to the Chamber of Agriculture for the agenda paper for the Geelong Convention:—Resolved, that the Government endeavor, by all means at its disposal, to find some adequate and cheap spray to deal with brown rot, which is having such a disastrous effect on soft fruits generally.

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Messrs. McPherson's Pty. Ltd., 582 Collins-street, Melbourne, are advertising "Acme" Low Down and "Rapid" Centrifugal pumps. This firm also stocks piping and fittings and all orchardists' tools. Catalogues are obtainable free on application.

Messrs. Trewhella Bros. Pty. Ltd., of Trentham, Victoria, are advertising Monkey Grubbers for pulling up stumps and useless trees. For further information, see their advertisement in this issue.

Shipment to Rotterdam.—Letter to hand from J. W. Barker, just too late for this issue. Held for publication next month.

Annual Conference of Citrus Growers.

Work of the Victorian Central Citrus Association Reviewed.

Growers from New South Wales, Victoria and South Australia Meet in Melbourne.

THE 10th Annual Conference of the Victorian Central Citrus Association was held at Anzac House, Melbourne on February 24 and 25. Mr. A. W. Schwennesen presided. There were also present:—C. M. Halhed (Mildura), P. Cobbett (Bamawn), F. Cotton (Echuca), S. P. Taylor (Curlwaa), C. V. Rees (Long Lake), H. S. Argyle (Lake Kangaroo), E. A. Williams (Murrabit), R. J. Watson (Perricoota), P. Rossiter (Ngawe), W. Newton (Mildura), C. H. Cameron (Red Cliffs), P. Makin (Tongala), and —. Ingram (Tresco).

Interstate visitors included: Gen. J. Heane (President N.S.W. Fruitgrowers' Federation), F. H. Metters and N. H. Underwood (Murray Citrus Growers' Co-operative Association).

There were also present during the Conference: Messrs. J. M. Ward, S. A. Cock, and E. E. Meeking (Department of Agriculture), Sir Stanley Argyle, M.L.A., Hon. H. Keck, M.L.C., A. G. Whitlam (University), and L. K. Gardiner.

In introducing the Minister for Agriculture (Hon. W. Slater, M.L.A.), who opened the Conference, the Chairman stated that the Association was a voluntary organisation representing 22 districts, from Wangarratta to Mildura, with a production of a half-million cases of fruit.

The Minister, in declaring the Conference open, stated that the extraordinary development of citrus production in Victoria, which had now reached a half-million cases, had brought many problems with it. Closer organisation was absolutely necessary. His Government favored the introduction of marketing legislation. Queensland had a system which had been of value to growers.

Dealing with items appearing on the agenda paper for the Conference, Mr. Slater stated in regard to fumigation, the relations between growers and the Department had not been too cordial. He suggested that packing sheds might get together and take over the Government fumigating plants.

In regard to spraying oils, the Department would give consideration to the question of publishing an analysis of the contents of same. He was in favor of this providing some equitable plan could be arrived at. In connection with the cost of manufacture of spraying oils, an enquiry into this would present some difficulties. He saw no objection to provision being made for the dipping of secondhand cases, although he pointed out that in some Victorian districts secondhand cases could not be used. He believed the citrus industry was largely dependent for its advancement on the help which could be given by the Council for Scientific and Industrial Research, the Agricultural Department and the Railways Department. These organisations were prepared to place their services at the disposal of growers.

General Heane, in proposing a vote of thanks to the Minister for Agriculture, emphasised the necessity for developing the export trade. Before it could be developed, he said, it would be necessary for growers to receive a guarantee that they would not lose the sums involved in shipping their fruit abroad. Up to the present, citrus growers had received practically no assistance in establishing the export trade.

Organisation.

"That Conference affirms the principle of organisation as outlined by the Murrabit Branch in their circular to branches, i.e., that branches form District Councils and appoint delegates thereto and the District Councils appoint a Director to the Central Association."

This resolution was introduced by Mr. C. V. Rees (Long Lake). The motion was supported by Messrs. Ingram (Tresco) and Williams (Murrabit). The latter suggested that the Association should be organised on the lines of the Returned Soldier Settlers' League, with the local branch as a basis, with a district council to send a delegate to Conference. He suggested that a sub-committee be appointed to draw up a scheme of grouping for submission to the Conference later.

Mr. J. Parkes, manager, stated that the Murrabit proposition had been forwarded to all districts, and only eight out of the twenty-two had responded.

Capt. Halhed stated that the crux of organisation in the way suggested or in any way, was finance. He was pre-

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pared to pay 6d. per case for organisation, but all growers were not agreeable to this. After a long discussion, the motion, on being put to the meeting, was lost by nine votes to five.

Levies.

On the motion of Mr. Cobbett (Bamawm), seconded by Capt. Halhed (Mildura), it was agreed:—

"That central levies for the 1931-32 season be on the following basis:—(a) 2½ per cent. on gross realisation with a rebate to local Associations of ½ per cent. on—(1) Fruit sent to accredited agents in Melbourne; (2) fruit sold to Victorian Railways; (3) fruit sent to accrediated agents of the V.C.C.A., or affiliated Associations in other States, provided the commission charged by such agents does not exceed 7½ per cent. (b) 2½ per cent. on net realisation, excluding the deduction for agents' commission on—(1) Fruit exported through the V.C.C.A. on sale or consignment. (c) One penny per case, with a rebate to local Associations of 1d. per case on—(1) Fruit sent to accredited agents in country centres. (Note.—Agents rebate the V.C.C.A. 1d. per case from their 10 per cent. commission.) (d) One penny per case on—(1) Fruit sent to any other agent in Australia than mentioned under (a) or (c), including accredited agents of the V.C.C.A. or affiliated Associations in other States whose commission exceeds 7½ per cent., or sold privately in Australia; (2) fruit exported on sale or consignment through channels other than the V.C.C.A."

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Factory Supplies.

It was decided—"That no sales of Lemons be made to factories without signed contracts which should provide, inter alia, that complaints regarding quality of fruit should be made to the V.C.C.A. not more than 24 hours after delivery at Spencer-street."

Mr. J. Parkes, manager, speaking on the motion, pointed out that factories had to face unprecedented factors this year. Mould develeped in the fruit before arriving at Spencer-street. He had been in touch with the manufacturers, and they had intimated that, providing no fruit arrived on Saturday, they were favorable to the proposal as outlined in the resolution.

Fumigation.

A resolution from the Murrabit branch requested that where the Department of Agriculture carries out fumigation a guarantee be given that a satisfactory kill of scale would be made. The Government Citrus Expert (Mr. S. A. Cock) said the Department had given a 95 to 97 per cent. commercial kill. Owing to financial circumstances no further fumigation would be performed by the Department, which would be pleased if district Associations would take over the plant and do the work on behalf of growers.

The Superintendent of Horticulture (Mr. J. M. Ward) said that if packing sheds would undertake the work, departmental officers would give every assistance.

On the motion of Mr. Brown (Shepparton), seconded by Mr. Makin (Tongala), it was decided "that in the opinion of this Conference it is absolutely essential that the Department of Agriculture should continue to carry out the fumigation of citrus crops on behalf of growers."

Secondhand Cases.

On the motion of Mr. Cobbett, seconded by Mr. Brown, the following resolution was carried:—"That this Conference requests the Department of Agriculture to have regulations adopted making it compulsory for all secondhand cases and bags to be sterilised prior to being used."

Mr. J. M. Ward (Superintendent of Horticulture) stated that he was in sympathy with the resolution, but doubted if it could be made workable.

Export of Citrus.

The manager, Mr. J. Parkes, submitted a report on this question. The information received from districts indicated that a phenomenally heavy crop was expected in the coming season. The question of export was an important one. Owing to light crops, there had been no need for export since 1925. He quoted extracts from a letter received from a London fruit broker, stating that since 1925

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the export of Oranges from South Africa and South America had developed considerably. Last year South Africa sent 1,850,000 cases to England, and Brazil 516,000 boxes. He considered the prospects for Brazil Oranges much brighter than South Africa. Their Oranges seemed to be of better quality, very sweet and full of juice. He was convinced that regular shipments of Australian Oranges, under good conditions, would realise higher prices than South African. Mr. Parkes stated that this report and other advices received by him indicated that if conditions were normal in London, from 15/- to 20/- per case could be expected for Australian Oranges. As it cost 14/- to 15/- to land and sell in London, it was to be seen there was a very small margin to work on.

Mr. F. H. Metters (South Australia) said that export was essential. Record crops were expected in South Australia this coming year. Some growers were prepared to ship from 33 1-3 per cent. to 50 per cent. of their crops overseas. Analysis of the 1925 prices received for 1 1-3 bushel case of South Australian Oranges showed that the prices averaged 23/- to 24/-, late shipments 21/8. These prices were not likely to be realised this year, and the prospects did not warrant large shipments. His Association was negotiating with the shipping companies with regard to filling one chamber with 12,000 cases. They would like the Victorian growers to come in with them. He considered the Australian Oranges had lost prestige through being off the London market during the last few years.

Mr. Underwood (S.A.) stated that one broker in London was prepared to advance 12/- per case against documents; another, 8/-. These figures gave some indication of the market prospects. He trusted the Victorian growers would co-operate with South Australia in this matter.

Export to Canada.—Speaking of this matter, Mr. Parkes stated that the New South Wales citrus growers had shipped 40,000 bushel cases to Western Canada last year, and would probably send supplies this year. Eastern Canada had possibilities; steamers left Australia once a month. It was proposed to send an experimental shipment of 500 cases to Eastern Canada at the end of June or July. Capt. Halhed had promised 250 cases of fruit, C. H. Tutton 250 fruit cases free, and the shipping companies had promised to rebate 50 per cent. of the freight charged, if the fruit did not arrive in satisfactory condition. The Board of Directors of the V.C.C.A. had agreed to meet the balance. The chamber would hold 1,200 cases, and he appealed to growers to supply sufficient fruit to fill the chamber.

Shipments to the East.—The directors had this matter under their notice, but had stayed their hand awaiting the report from Mr. W. Ranger, who was at present visiting the East.

New Zealand.—At the present time N.S.W. was supplying the North Island and South Australia and Victoria the South Island. 75,000 cases had been sent to New Zealand from South Australia and Victoria last year. He considered that this could be increased. The co-ordination of shipments was absolutely necessary. Too much fruit arriving at the one period made the prices most unprofitable.

Export Levy.

Speaking on the question of export, Mr. Williams (Murrabit) stated that a levy of 2d. per case should be imposed for an export fund. It was well-known that fruit from some districts would not carry, and they should not be asked to ship fruit. Capt. Halhed stated that the Mildura district's pack amounted to 180,000 cases. Growers were up against sending fruit to London at a loss. They

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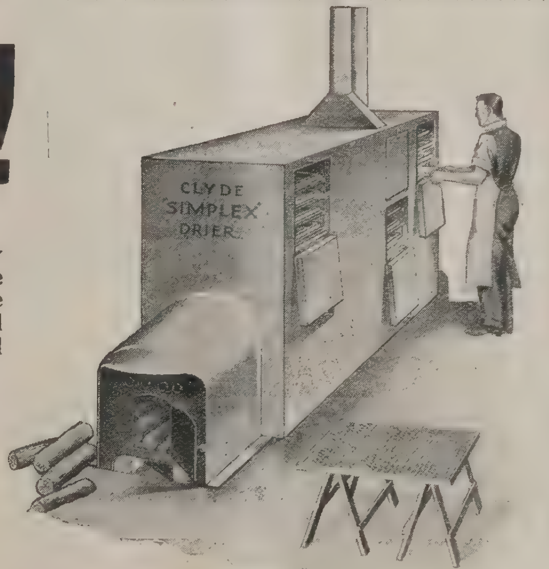

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considered that export regulations should be tightened up. Only certain districts can get good fruit, and it was straining the loyalty of growers who grew the fruit to ask them to export to keep up the Melbourne market. There must be compulsion in this matter or not.

Sir Stanley Argyle stated that in his opinion the citrus industry would sooner or later be dependent on export. We were up against countries which were spending large sums of money on research work, etc., in their efforts to hold the overseas markets. The question of the methods of preservation of fruit should be given close attention. He was opposed to compulsion in regard to marketing generally, but he could see the force of the argument in regard to an export equalisation fund.

Mr. Cobbett considered that legal sanction for an export levy was the only hope they had.

Mr. Taylor (Curlwaa) said it was not possible to get a legal remedy this year. Something must be done this season in regard to an equalisation scheme. His district was agreeable either to export their portion or pay a substantial levy.

The Hon. H. Keck, M.L.C., Mr. Brown (Shepparton), and Mr. Rossiter (Ngawe) said they were opposed to compulsion generally in regard to marketing, but they favored the export levy.

After further discussion on this matter the following resolution was carried, on the motion of Mr. Williams, seconded by Capt. Halhed:—"That it be a recommendation of the directors of the V.C.C.A. that strong efforts should be made during the coming season to secure an entry into all available markets, and that the directors take up the question of the possibility of having a compulsory levy made on all citrus fruit marketed in Victoria, to enable a fund to be build up to ensure Melbourne parity prices for all fruit exported.

Marketing.

Mr. J. Kitchin-Kerr, Market Manager, submitted a report on the activities of the Association up to December, 1930. In the course of his report Mr. Kerr stated that the past year had been an abnormal one. The big volume of fruit, combined with the economic conditions and faulty state of fruit on arrival, were the main factors in reducing the average price for 1930 to 7/6 as compared with 10/6 for the previous year. Owing to these factors larger supplies had been sent to outside agents. The proportion controlled by the Association was approximately 51 per cent. A long discussion took place regarding the Market Manager's report, and the resolution on the agenda—"That Conference recommends consideration of the selling system to ascertain if a better system of marketing than the present one of limitation of agents could be evolved." The resolution was subsequently carried.

Fertilisers.

On the motion of Mr. Taylor (Curlwaa), seconded by Mr. Williams (Murrabit), the following resolution was carried:—"This Conference of interstate citrus growers appeals to the Commonwealth Government to permit of the introduction of spraying oils and fertilisers duty free as an essential step in the direction of reducing costs of production and so enable the citrus industry to meet the altered economic conditions.

Waste in Fruit, 1930.

In a report to the Conference by Mr. S. A. Cock (Victorian Government Citriculturist) on the investigations into the abnormal conditions of the keeping quality of citrus fruits during 1930, he stated that they were convinced that the waste was due to abnormal seasonable conditions and the absence of frosts during the months of May and June.

Central Packing House in Melbourne.

A report was submitted on this matter by Mr. S. A. Cock (Government Citrus Expert). It was decided to refer the matter to the Board of Directors.

Bulk Buying.

The principle of bulk buying of cases, nails and other materials by the V.C.C.A. was affirmed, on the motion of Mr. Williams, seconded by Mr. Brown.

Official Luncheon.

An official luncheon was tendered to delegates and visitors. The toast of Parliament was responded to by Mr. E. J. Mulvaney, who apologised for the absence of the Minister of Markets. He stated that the latest figures showed that by 1936 Australia would have an exportable surplus of 1,000,000 cases. Growers must organise for this export trade. He was authorised to say that if the growers required it, the Government would bring in legislation to control the export and interstate trade. The Federal Government could give assistance in this matter, but local marketing was a matter for the State Government. Other speakers included General Heane, Hon. H. Keck, M.L.C., G. H. Underwood, J. M. Ward.

Australian Dried Fruits Industry.

Oversea Sales.

The Commonwealth Dried Fruits Export Control Board advise that during the week ending February 19, 622 tons dried fruits were sold in Great Britain, valued at £20,330. 216 tons Sultanas averaged £40/15/- per ton and 394 tons Currants were sold at an average of £28/3/4 per ton.

Sales to date in Great Britain are 28,487 tons; in Canada 6,867 tons, and in New Zealand 1,962 tons.

Reports from the principal producing centres foreshadow a substantial decline in production this season, and particularly in Sultanas.

The present exchange position is enhancing substantially the return from all export markets, as conditions of licences are such as to secure for producers the full benefit of the exchange situation.

N.S.W. DRIED FRUITS BOARD.

At a meeting of the N.S.W. Dried Fruits Board held at the end of January, there were present Messrs. G. J. Evatt (chairman), E. J. Hudson and R. A. C. Freeman.

It was decided to reimpose the levy of 1/32d. per lb., notwithstanding that the 1931 pack will be lighter than those of 1930 and 1929.

Export Quotas.—Certain legal difficulties were anticipated in the carrying out of the export quota regulations, under which N.S.W. was treated differently from the other States. The export proportions of Currants and Sultanas, are, by arrangement with the A.D.F.A., as follows:—1931, 65 per cent.; 1932, 75 per cent.; 1933, 80 per cent., and uniformity thereafter. Lexias to be uniform with South Australia and Victoria each year.

After discussion with the A.D.F.A., however, it is thought there will be no difficulty in the mutual operation of the export quotas.

It was decided to join with the other States in a joint publicity scheme.

AURORA FRUITGROWERS.

At the annual meeting of the Aurora Fruitgrowers' Association held at Mildura early in February, Mr. C. Hall presided over a large attendance. Mr. J. W. Bowen, managing-director of the Aurora Packing Co., gave a detailed report of the operations of the company. Feeling reference was made to the death of Mr. P. T. Berry and Mr. E. Rowe. Increased trade with New Zealand was expected, especially citrus and dried Apricots. The company had a capital of £99,000.

The gift of £75 to the local hospital was warmly appreciated.

In view of the good financial position of the company it was decided that no levy be struck this year.

The President (Mr. Hall), was re-elected, also the retiring Committee, consisting of Messrs. W. Furlong, M. Young, S. Mansell and R. Beal.

FRUIT TREES GOODMAN'S

Fruit Growers! Make this a real "Goodman" season—plant Fruit Trees from Goodman's and have orchards that will yield bumper crops of first-class fruit, season after season.

Goodman's Fruit Trees are all well grown, clean, healthy—available in all varieties! Orders promptly filled—reliable Trees sent to any part of Australia.

CATALOGUE FREE

C. J. GOODMAN PICNIC POINT NURSERIES BAIRNSDALE

MILDURA CO-OPERATIVE FRUIT CO.

SATISFACTORY PROGRESS was reported at the annual meeting of the Mildura Co-operative Fruit Co., held at Mildura on February 22. The Chairman, Mr. A. L. Johnstone, reported that the quantity of vine fruits received from growers was 12,745 tons—only 700 tons short of the 1929 pack, which was a record.

The balance-sheet showed that the paid-up capital had increased from £63,884 to £65,426. The company's financial position was never better. A pleasing feature was the increase of sales in Canada since preference was granted—from 776 tons in 1926 to nearly 7,000 tons this season. The preference granted by Great Britain was greatly appreciated. It was hoped New Zealand was bringing into operation the suspended duty of 2d. per lb. on foreign dried fruits. The A.D.F.A. was the sheet anchor of the industry. The company was successfully handling citrus—34,490 cases last season—also fresh Grapes. The assistance of the Railway Department in disposing of the Grapes was gratefully acknowledged.

A dividend of 7 per cent. on the capital was declared, also 7 per cent. bonus on shareholders' deposits.

The retiring directors, Messrs. A. L. Johnstone, Geo. Hudson, and G. F. Lush were re-elected. At the instance of Mr. E. T. Henderson a vote of thanks was accorded to the directors, the general manager, and the staff.

AUSTRALIAN DRIED FRUITS.

Apricots, Nectarines and Peaches.

New Season Prices.

The following are the new season prices fixed by the Australian Dried Fruits Association for Apricots, Nectarines and Peaches:—

	Single-Box Price. Per lb.
Apricots—	
4-Crown	9½d.
3-Crown	8½d.
2-Crown	7½d.
1-Crown	6½d.
Slabs	6½d.
Sacks (ungraded)	6½d.
Nectarines—	
4-Crown	8½d.
3-Crown	7½d.
2-Crown	6½d.
1-Crown	5½d.
Sacks (ungraded)	6d.
Peaches—	
4-Crown	8½d.
3-Crown	7½d.
2-Crown	6½d.
1-Crown	5½d.
Sacks (ungraded)	6d.

The above prices are for main capital cities and producing centres, plus the usual additions to prices for shipment to other ports.

The opening prices this year show a considerable reduction on last year's opening rates, and it is hoped by the Association that this will have the effect of stimulating the demand.

PERSONAL.

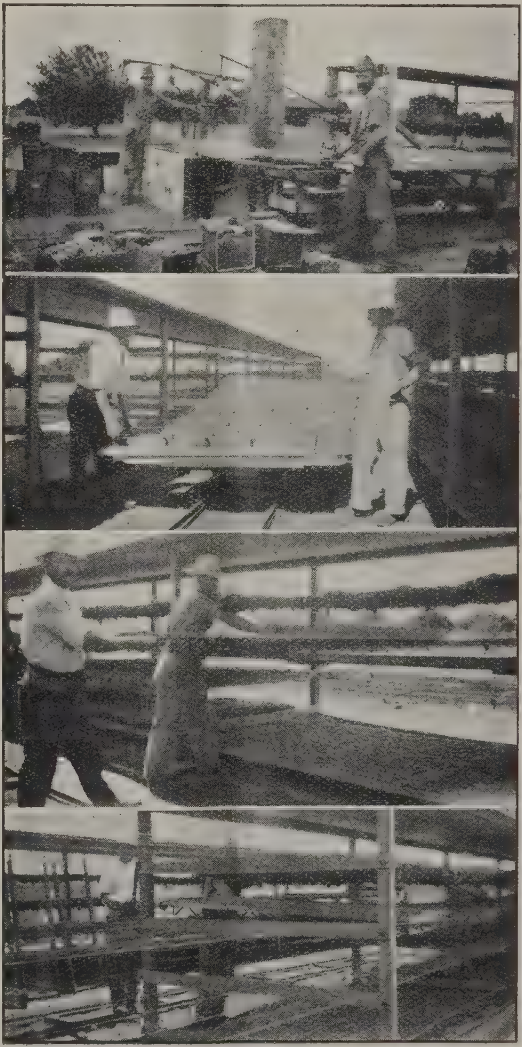
Mr. J. W. Bowen, managing-director, Aurora Packing Co., addressing dried-fruit growers in Mildura recently, launched a heavy indictment against the inflation proposals of the Federal Government.

Drying Vine Fruits.

A NEW DEVICE for assisting dried-fruit producers has been brought forward by Mr. E. L. Frith, of Waikerie, South Australia. The plant illustrated herewith is the result of three years' study.

The plant consist of:—(i.) Dip tank—5 ft. 11 in. x 2 ft. 8½ in. x 1 ft. 6 in. deep—capacity, 120 gallons. (ii.) Carrier and balanced wire-mesh cover sliding up and down dip tank, suspended by two arms of an (iii.) elevated balance gear supported by two 4 in. x 4 in. jarrah posts. (iv.) Six wire-woven bottom trays with plain galvanised iron sides 3 in. high, 5 ft. long by 1 ft. 6 in. wide, or five ditto 4 ft. long by 1 ft. 10½ in. wide, subdivided every 6 in. of length by galvanised iron crosspieces 1½ in. high. (v.) Slide.

FRITH'S PATENT "SPREADIP" SYSTEM.



Illustrations (from top to bottom)—(1) The last of a set of fruit-laden trays entering dip for immersion; (2) Placing slide over fruit trays prior to inversion; (3) After tray and slide are placed in desired position on rack, the tray is held firmly, whilst the slide is withdrawn: (4) Same as No. 3—opposite side of rack.

Your Trees Need Nitrogen

See That They Get It
In The Right Form.

Chilean Nitrate of Soda

The Surest Guarantee of a Heavy Crop of
HIGH QUALITY FRUIT

OBTAINABLE FROM LEADING FERTILIZER FIRMS

Write for Pamphlets:—"The Fruitgrower's Book of Manures"
"Manures for Citrus Trees"
Supplied Gratis by G.P.O. Box 1197 HH
The Chilean Nitrate Agricultural Service
7 Wynyard Street - - Sydney

The dip tank is built in as usual. In the dip tank suspended by two arms of the elevated balance gear is the carrier, which receives the fruit-laden trays. These trays take two full kerosene buckets filled with Grapes; 5 ft. trays may be used on 4 ft. racks, in which case the tray is filled only up to the 4 ft. subdivision. The carrier, which can accommodate both 5 ft. and 4 ft. trays, holding the fruit-laden tray has a balanced, hinged wire-mesh cover to prevent escape of fruit in the process of immersion. The cover automatically connects and disconnects at the the right time when immersing and returning the fruit to the surface.

The fruit is immersed by operating a lever connected with the elevated balance gear over dip tank, with counterweight adjustable as required to balance the weight of the fruit-laden trays.

After immersion, the tray is withdrawn and received by suitable and convenient transport for delivery to drying rack.

At this point a light plain iron slide is placed over and automatically clips the tray of fruit. This slide has runners on the opposite side to which the tray is attached. In this position they are inverted and the fruit lies on the slide. The tray and slide, together are now lifted to its position on the wire-netting of rack. Taut tiers make for easy entry of slide. The tray is now held firmly while the slide is withdrawn, and the fruit then falls on the wire-netting without need for further spreading.

The advantages over the existing system are stated to be as follow:—The fruit is dipped only one bunch thickness; is handled only when fresh, i.e., spread (an easy operation on trays) before dipping; cannot stew while waiting to be spread (it would actually dry on the trays); sand is eliminated before it reaches dip; close tiered buckets present no difficulty as with dip buckets; spread from one side of rack only; can be spread thickly or thinly at will; fruit may be culled while in trays prior to dipping; bunches not plucked from wire netting to place in another position; the "get-away" of solution is instantaneous, ensuring an even dip, and greater accuracy in timing the length of dip is possible.

It is estimated that the cost of the plant is about £30.

Sydney Fruit Trade.—In the advertisement of Mr. A. J. Cooper, fruit merchant, Fruit Exchange, Bathurst-street, Sydney, which appeared in the 1931 edition of the "Fruit World Annual," we omitted to include the fact that Mr. Cooper is a licensed farm produce agent. Mr. Cooper is also representative for English firms in Liverpool and London. Correspondence is invited on all matters relating to marketing of fruit, local and overseas.

Rockhampton

The starting point for the Great Queensland Central Railway has a population of 30,000, and offers a good market for your fruit.

ORCHARD FRUIT SUPPLIES
offer a prompt and reliable selling service. Best Prices. Prompt advices and returns.

Reference:—Australian Bank of Commerce.
'Phone: 1584.
P.O. Box, 223. Brand: ORCHARD RTON.

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

NEW SOUTH WALES.

Sydney:
Chilton, F., City Fruit Markets.

VICTORIA.

Melbourne:
Andrew, Fred. J., 416 Lit. Collins St.
Cave, F., & Co., Melbourne.
Colombie, H. G., Temple Court.
Davis, J., Pty. Ltd., Western Market.
Mellor, F. R., 440 Elizabeth Street.
Millis, A., & Sons, Western Market.
Lister, G., Western Market.
McLean, N. N., Pty Ltd.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Western Market.
Renouf, R., Western Market.
Ross, J. W., Western Market.
Scott & Edwards, King Street.
Silbert, Sharp & Davies, Western Market.
Stott & Son, T., Western Market.
Tim Young & Co. Pty. Ltd., Western Market.
Vear, F. W., 49 William Street.
Wilson, H., Western Market.
Woolf, G., Western Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Western Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., 88 Collins Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

GREAT BRITAIN.

London:
Charles Knights Ltd.
M. Isaacs & Sons Ltd.
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Garden.
Dan Wuille & Co. Ltd.
The White Service,
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
Connelly, Shaw Ltd.
White & Son Ltd.
W. G. Gosling.
The Port of Hull, London and N.E. Railway. Rep., Major H. S. Cole, c/o Burns, Philip & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
MacGeorge & Jardine.
Woodall & Co.
Liverpool Fruit Brokers.
Johnson, T. S., & Co.

Bristol and Southampton:
Bristol Fruit Brokers Ltd.

Cardiff, Belfast and Dublin:
Connelly, Shaw Ltd.

Glasgow:
Russell, Turnbull & Co.

FRANCE.

Scheiber, E., Paris.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Algemeene Vruchten. Import Maatschappy (also Cologne).
Astheimer, P. H., & Son, Fruchthof.
Heinz-Tiencken.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof. Reps., J. B. Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

HOLLAND.

Amsterdam and Rotterdam:
Algemeene Vruchten Import, Maatschappy.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.
Kobenhaons Fugtauktioner.

Market Prices News and Notes.

Great Britain.

London (10/1/31) (Covent Garden).—Apples, Bramley 5/- to 9/- bushel, C.O.P. (national mark) extra fancy 25/- to 30/- case, fancy 22/- to 27/6, Bramley 10/- to 14/-, B.C. Jon. 9/6 to 11/6 box, Del. 10/- to 11/-, Oregon Newtown 9/- to 10/-.

London Fruit Exchange (Spitalfields) auction prices for week ended January 10: Oregon Newtown 8/- to 11/6, Jon. 8/6 to 10/9, B.C. Del. 7/6 to 10/-; Pears, American Anjou 8/- to 10/- box, G. Morceau 7/- to 8/-.

Liverpool Fruit Exchange (auction), B.C. Del. 9/- to 11/3 box, Jon. 9/- to 10/-, Oregon Newtown 9/6 to 13/-; Oranges, California 176/252 20/- to 23/- box.

Hull (10/1/31).—Eng. Bramleys 8/- to 10/- bushel, Oregon Newtown 11/- to 13/- box, Winesap 9/- to 10/-; Cal. Pears, Nelis 12/- to 13/-, Hardy 12/- to 14/-.

Manchester (10/1/31).—Winesap 9/6 to 11/6 box, Cal. Newtown 9/6 to 10/6, Oregon Newtown 10/- to 14/-; Valencia Oranges, 240's 12/- to 16/-; Jaffa, 140's and 150's 11/6 to 12/6.

Glasgow (10/1/31).—Washington Winesap, 11/-; Lemons, Murcia 240/300 10/- to 14/-; Oranges, Jaffa (box) 5/- to 11/6; Valencia, 200/504's 8/6 to 17/-.

New South Wales.

Sydney (23/2/31).—The market representative of the Fruitgrowers' Federation of N.S.W., gives the following information in his report for week ending 23/2/31. Prices quoted are for average quality fruit in sound condition. Apples, dessert 5/- to 8/- per bushel (special to 10/-), cookers 5/- to 8/-, G.S. 6/- to 10/-, Five Crown 4/- to 7/-, demand steady, good supplies available. Bananas, 9's 12/- to 14/- per tropical case (few to 16/-), 8's 9/- to 11/-, 7's 6/- to 8/-, 6's 4/- to 6/-, market over-supplied, fruit ripening quickly owing to the hot weather, demand poor. Grapes, Muscats 5/- to 8/- per box (few to 10/-), Whites 4/- to 6/-, Black Hamburg 3/- to 5/-, M.I.A. 3/- to 5/-, demand firm. Lemons, fresh 5/- to 10/- per bushel (some special to 12/-), cured 8/- to 14/-, demand good except for rough and inferior. Oranges, Val. 5/- to 13/-, 2nd crop 4/- to 8/-, fair demand mostly for special fruit. Nectarines, 6/- to 9/- per box, supplies light and met a keen demand. Passion Fruit, 5/- to 12/-, firm demand for choice fruit, supplies scarce. Persimmons, 2/- to 3/-, most of the fruit too green and very hard to sell, even at low values. Peaches, local 4/- to 6/-, M.I.A. 3/- to 5/-, Vict. 5/- to 10/- per bushel, supplies lighter and prices improved, demand fair. Pears, local Williams, 5/- to 9/-, Vict. 5/- to 8/-, demand firmer, prices improved at the end of week. Plums, President 1/6 to 4/- per box, Pond's Seedlings 1/6 to 5/-, others 1/6 to 3/-, demand very weak. Prunes, 1/6 to 3/-, practically no demand except for large sizes. Pineapples, 5/- to 8/- per tropical case, market over-supplied with fruit in poor condition, and low values ruled during the week, stocks are lighter to-day, prices expected to move up. Quinces, 4/- to 6/- per bushel, demand very limited and supplies light. Rock Melons (Cantaloupe) 2/- to 4/-, (Honeydew) 4/- to 6/-, 6/- to 9/- per Pineapple case, 8/- to 11/- per ale case, California Creme 1/- to 2/- higher, fair demand for all varieties. Tomatoes, green 3/- to 5/- per box, colored 5/- to 8/-, supplies were lighter and with increased demand due to the hot weather values advanced sharply towards the week-end, future prices depend on quantities arriving. General.—Trading continued quickly and with practically no alteration in volume from previous weeks. Pears and Peaches were a little firmer and Tomatoes also moved up smartly. Bananas collapsed owing to over supply of ripe and inferior fruit. The demand for Plums fell right away. Other varieties showed little change.—P. S. Macdermott, Market Representative.

Victoria.

Melbourne (27/2/31).—The following prices, supplied by the Wholesale Fruit Merchants' Association of Victoria, are those which ruled yesterday:—Bananas, Queensland, green, in double cases, 9's and 8's, 17/- to 18/-; 7's, 14/- to 17/-; 6's, 12/- to 14/-; selected lines for country trade higher; Grapes, 4/- to 7/6 per case, few special lines higher; Lemons, 7/- to 12/- per case; Pineapples, best counts, 8/- to 9/-; smaller fruit, from 6/- per double case; Peaches, white flesh, to 7/-; yellow flesh, to 5/-; Pears, 5/- to 7/-; Tomatoes, 2/- to 4/-; Valencias, 5/- to 8/-; few specials higher; Cantaloupes, 2/- to 4/- per bushel case; Rock Melons, 2/- to 4/-, weak demand.

The Melbourne manager of the Federal Citrus Council of Australia reports that sales were as follow:—Lemons, standard, 180-248, 9/- to 13/-; a few specials higher; small, marked or large, 6/- to 8/-; faulty and wasty lines lower. Valencias, average standard grade, 5/- to 8/-, according to count; with 12/- to 13/9 best; a few selected lines higher.

South Australia.

Adelaide (20/2/31).—Apples (eating), 6/- to 7/- case; do., cooking, 5/- to 6/- ; Figs 7/-; Grapes (dark), 6/-; do., (white), 6/-; Lemons, 12/- to 13/-; Nectarines, 13/-; Oranges (Common), 8/-; Navel, 13/-; Peaches, 7/- to 8/-; Pears (eating), 5/- to 6/-; (cooking), 3/-; Pineapples, 14/-; Plums (light), 3/- case; (Damson), 6/-; Japanese, 6/-; Quinces, 3/-.

Western Australia.

Perth (16/2/31).—Apples, Dunn's, flats 3/6 to 6/6, dumps 5/- to 8/6; Cleo., 4/- to 8/-, 5/- to 9/-; Jon., 5/- to 9/9 (others from 3/6). Other varieties, 3/- to 6/6. Citrus: Oranges, plains, flats 3/- to 7/- (special to 8/6), dumps 3/6 to 8/6; Lemons, flats 4/- to 8/6 (special to 10/-). Stone fruit, Plums, Satsuma, flats 3/6 to 9/- (special to 10/6), Wickson and Climax 3/6 to 11/- (special to 12/6), Burbank 4/- to 7/-, other varieties 4/- to 13/-; Peaches, 5/- to 11/6 (inferior from 5/-), Nectarines, 7/- to 13/- (special to 15/-); Pears, Bartlett, flats 3/6 to 6/- (prime ripes to 10/6), dumps 4/- to 7/6, other varieties from 2/-; Grapes, open, whites 2/9 to 5/6, colored 3/- to 8/- (special to 9/3); Passion Fruit, 5/6 to 9/- (special to 10/6); Tomatoes, 4/- to 8/6 (inferior from 1/3).

Queensland.

Brisbane (23/2/31).—Stanthorpe Plums of the Pond's seedling type, brought from 6/- to 9/- per case, Presidents from 4/- to 6/-, and G. Dukes from 5/- to 7/-; Grapes, Muscatels 3/6 to 6/-, Black Prince 3/6 to 5/-, G.C. 4/6 to 5/6, Waltham Cross 6/- to 8/-, white 3/- to 5/-. Eating Apples, Grav. class in colored condition 5/- to 8/-, green sorts from 3/- to 5/-, Jons. 5/- to 8/-, Munros 4/- to 5/-, G. Smith 6/- to 9/-, Five Crowns 6/- to 7/-. Local Papaws 2/- to 5/-; Passion Fruit 6/- to 10/-; local Lemons, 4/- to 8/-; Peaches, Stanthorpe, 2/- to 5/-; Pineapples, rough leaf 1/- to 4/-, smooth leaf 2/- to 5/-; Pears, Stanthorpe, 4/- to 8/-; Quinces, 4/- to 6/-.

Tasmania.

Hobart (20/2/31).—Apples, Grav. 2/- to 7/-, W.P.M. 3/- to 6/6, L.S. 4/- to 6/6, St. Law. 6/6 to 6/9, P.A. 3/6 to 4/6, Alex. 3/6 to 4/3, Alf. 3/6 to 4/6, M.C. 3/- to 4/-, R.P. 3/6 to 4/-, W.F. 2/6 to 3/6, other lots 2/- to 3/6 per case; Apricots, 5/- to 6/-, ditto 2/- to 2/6 per half case; Peaches, 3/6 to 6/-; Nectarines 1/6 to 4/-.

New Zealand.

Dunedin (19/2/31).—Reilly's Central Produce Mart report prices as follows:—Grapes, local 1/6 to 1/9 per lb; Peaches, 3/- to 5/6 per case; Plums, 2/6 to 5/-; Nectarines, 6/- to 8/-; Raspberries, 8/6 to 9/- bucket; Loganberries, 8/-; Apples, Grav., choice 10/6 to 12/6; small 6/- to 8/-; W.B.C. Pears, 10/6 to 12/-; California Navels, 33/6; Mission Lemons, 40/-; Grapefruit, 33/-; Passions, N.Z. "Socro," large 32/6, quarters 15/6; Pines 20/-; Bananas, choice, ripe 25/-; Samoan, green, 21/-.

A NEW PEACH.

At the Hawkesbury Agricultural College, N.S.W., the Fruit Branch of the Department of Agriculture is testing out the new Peach, "Taylor's Anniversary Red." This Peach has already been referred to in the columns of the "Fruit World." The variety produces large fruit, with a small pit. Tests are being made by crossing this variety with other commercial sorts.

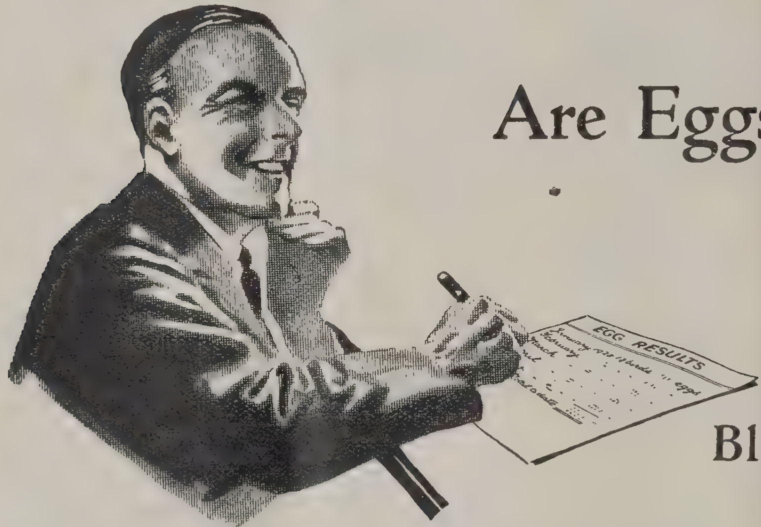
FRUIT TREES

ONE GROWER SAYS—

"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

How Are Your Fowls Laying?



Are Eggs Plentiful?

If not—

Blame Yourself!

Are your birds giving you satisfactory egg-production? Do they lay regularly and steadily through the year? If they do not, it is no use blaming them, for only in rare instances of sickness is it really their fault. Blame yourself, for without a doubt you are responsible. You might think you are doing your best by them by feeding them well. Mr. Bonner, as he relates in the letter published below, thought so, too, but he found that no matter how well he fed them, they sometimes would not lay the whole winter through. Not until he started putting that dash of Karswood in the mash did he obtain satisfactory results the whole year round.

In Australia alone, thousands of poultry keepers have found the same thing, and the reason is perfectly simple. Karswood contains dried and ground insects and other suitable tonic ingredients which stimulate the hen in a healthy way. But it does not force. It cannot, for it contains no forcing ingredients.

"Never without eggs"

Dear Sirs,

I have used your poultry spice during the winter months and moulting season for some years. Since using same I have never been without eggs, whereas before no matter how well I fed them they perhaps wouldn't lay the whole winter. This year I sold all my hens except nine black orpingtons and five wyandottes, and right through I got from 6 to 11 eggs a day. I might also mention that I am not feeding by the laying schedule. I just give them pollard in the morning with the spice and whatever grain is grown on the farm for the night meal.

Yours faithfully,
(*Sgd.*) *M. BONNER, Olinda,*
10-9-29. *via Tylestone.*

"Doubled the Egg Yield"

I have much pleasure in expressing my appreciation of your wonderful Karswood Spice. Although only a backyarder with 12 pure bred B.O. I have found that by using Karswood Spice I have doubled the egg yield, whilst my fowls are healthy and full of life. I should also like to state that during the moult it has acted like a charm, quickly helping the fowls back to normal health. Should this statement be of any use to you, you are welcome to use it as you think fit. I might mention that I have 2 batches of young pullets which I hope to give your spice a thorough try out on and hope to let you know results later on.

(*Sgd.*) *J. W. QUINLIVAN*
4/6/29. *55 Bowden St. Ryde.*

"Hawkesbury College Averages Equalled"

I keep only White Leghorns, the number varies of course from time to time, at present it is about 110. I have used Karswood regularly for so long that I have no data as to the number of eggs laid before using, only I know that my monthly totals of eggs laid gives an average very little if any lower than the Hawkesbury College averages; vitality and hatchability of the eggs from breeding pen has been remarkably good, largely due I believe to the use of Karswood.

(*Sgd.*) *Mrs. E. SAYCE, 74 Cornish St.,*
3/6/29. *Broken Hill, N.S.W.*

"Karswood Starts Them Laying Again"

I have been using Karswood off and on for the past three years and found it most efficacious with hens when they go off laying. At times I do not give it to them but as soon as they show signs of falling off, "Karswood" quickly starts them again. You can make any use of this you like as it is my experience, anyway.

(*Sgd.*) *JAS. CLYNE, Ulva,*
Torrens Creek.

Make this Test

Go to your local grocer, storekeeper, or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half a dozen of your birds, in accordance with the directions on the packet. Do not expect immediate results—Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

Note the Economy

1/- packet supplies 20 hens for 16 days;
2/- packet supplies 20 hens for 32 days;
13/- (7lb. tin) supplies 140 hens for 32 days.

Supplies

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½ lb. packet, 1/-; 1 lb. packet, 2/-; 7 lb. tin, 13/-; 14 lb. tin, 25/-; 28 lb. tin, 48/-.

5 M.30

KARSWOOD POULTRY SPICE

Increases egg-production without forcing, because it contains ground insects but no cayenne pepper, etc.

Producing Eggs in Autumn.

THE Shell Company of Australia, producers of the well-known "Pennant" kerosene for incubators, have received the following advice from a well-known poultry expert on the production of eggs in autumn under Australian climatic conditions:—

It is during the autumn and winter that the largest profit in poultry farming is shown, because at this period the prices of eggs reach their highest peak, generally nearly double what it is for the rest of the year. This is, in fact, the period in which egg production can become a really profitable business.

As might be expected, the reason for the higher prices is that fresh eggs are scarce, due to the inability of the average poultry-keeper to keep his birds in production. During the spring and summer almost any fowls kept under any conditions will lay well, but later on it is only the birds that have been hatched at the right time and kept under proper conditions that will continue in production.

Pullet Producers.

In the first place, autumn eggs are almost wholly produced by the pullets which were hatched in the previous spring. At about the end of February the older birds ease up, and mostly stop laying altogether, preparatory to shedding their old and worn plumage and growing a fresh lot. This process may take from one to three months, depending upon the bird and her condition. During this time but few eggs are produced by these hens. The pullets, however, at the same time, should have reached maturity and be ready to commence. The age at which young birds should begin to lay depends, firstly, on the breed. With the light breeds, such as Leghorns, six months is about the average age. With heavy breeds, such as Orpingtons or Rhode Island Reds, it will be a little more.

It will thus be realised that the date on which chicks were hatched is most important. This should be so arranged that the resultant pullets will be the right laying age for their breed some time during the month of March.

Weather Protection.

The next important points to seek are proper conditions and food. Laying pullets must be protected from bad weather. On the average poultry farm the laying sheds are not protected nearly enough. If the pens are completely open in the front, they should be of sufficient depth (at least 10 feet) to provide protection. Where a long line of separate pens is used, the partitions of every second one should be carried right through in wood or iron to stop cross currents of air in the houses.

With reference to the housing of young stock for egg production during the autumn, it should be realised that full protection is necessary if best results are looked for. In the first place, the autumn is not the natural laying period, and it is only by applying artificial methods that fowls can be got to produce at all during this time.

Exercise.

Protection from bad weather becomes the first essential, and the provision of exercise the next. It is here that the intensive pen gives its highest value. The birds so housed should be away from heavy winds and rain, and forced to take a lot of exercise by being made to scratch in the litter for the grain portion of their food. In this way we provide both the necessary protection and exercise.

HOW TO MIX COD LIVER OIL.

In recent years the use of cod liver oil for poultry of all ages has been universally adopted. It is appreciated by the breeder of exhibition poultry, and is given to chicks up to three months of age and to layers during the winter months. There is a difference of opinion as to how best to serve it. Some rub it up in bran, then add the latter to the mashes. This is not a very clean way! Others stir the oil into the grain and feed the latter on the next day. This is a popular method for young chicks. Let me introduce to you what I consider a most advantageous method of using cod liver oil, states W. Powell-Owen in the "Feathered World." Place a little biscuit meal in a bucket and pour over the cod liver oil. Stir it well together, using a long spoon. Some little time after pour on the biscuit meal sufficient boiling water to be soaked up by the biscuit, stirring the whole well. It will be found that the biscuit meal absorbs all the water, retains the cod liver oil, and is ready in a most handy form for adding to the other ingredients of the wet mash. A little biscuit meal goes a long way, for the reason that it swells up to many times its original bulk when scalded. It is thus economic because of the increased bulk, and, what is more, it helps towards making the mash light and crumbly.

Recently the price of biscuit meal was reduced. Some poultry-keepers use boiled linseed in the mashes to aid feather finish, and it is a good plan and a very old one.

To prepare the linseed, simmer a cupful (for twelve adult birds) in water until it is a jelly. Slow boiling or simmering is best, and it can be added to the wet mashes when cold. If desired, boiled linseed can take the place of oil for moulting hens or maturing pullets.

MATING WHITE LEGHORNS.

Questions:

"White Pullet" (Ormond) writes:

1. I wish to set my own eggs for the coming season. I thought of mating one White Leghorn cockerel (age twelve months next August) with six or eight White Leghorn hens (age a little over two years next August). Will this be satisfactory for a good setting, If not, please advise.

2. Is it wise to keep White Leghorn pullets, six months old, coming into lay, with White Leghorn hens two years old?

Answers:

1. Good results should be obtained by mating an unrelated White Leghorn cockerel with six or eight second season hens. In fact, if a run is provided, more hens could be placed with a good vigorous cockerel.

2. If sufficient pens are available, it would be perhaps better to separate the two-year-old hens from the pullets, as when the latter are just coming into lay, the second year hens will probably be resting and in full moult, in which case they will not require the quantity of food that the laying pullets will need. The moulting hens can often be assisted by the feeding of sunflower seeds, linseed or other oil-containing food in order to assist them through the moult.

RETAIL FRUITERERS' ASSOCIATION.

Melbourne (26/2/31).

The monthly meeting of the Executive of the Melbourne and Metropolitan Fruiterers' Association, was held in the Temperance Hall, Russell-street, on February 5, there was a large attendance of delegates.

Among the correspondence was a request from the Growers' Provisional Committee, asking if this Association would receive a delegation from that organisation in reference to "Regulated Marketing Hours" at the Victoria Market, and it was decided that the request be granted, and delegates be invited to attend the next meeting and expound their views.

Complaints are still being made of shortweight goods in the market, these apply mostly to peas and beans, as the fruits which are usually sold wholesale by weight are nearly finished. There were also complaints regarding the large number of very old dilapidated and dirty cases in use at the present time for marketing fruit, many of the flat ones being almost as flimsy as a concertina, consequently Peaches and other soft fruits were very often injured in transit, resulting in heavy losses to both grower and buyer. It was stated that retailers and growers would benefit considerably if they despatched many of these old cases to the firewood stack.

Representations recently made to have the pea and bean sellers removed to another part of the market have not been successful, and possibly as the peak market diminishes later in the season many of those sellers will be accommodated in the sheds.

Comments on the Retail Trade.

The weather during the first few weeks of the year has been disastrous to all concerned in the fruit trade, and now that the warmer weather seems to be approaching, there is not the improvement in trade to equal other years.

Strawberries have been unusually cheap, and of good quality, and still there has not been the demand one would naturally expect, the same applies to Tomatoes.

All other fruit and shopkeepers report that owing to the depressed times the sales effected are considerably of smaller quantities than other years. Oranges are selling very slowly, although many are of excellent quality.

Fruitgrowers in the country would be wise to regulate their consignments for March 11, as the annual picnic of the retail fruiterers is held on that day, and the sale of fruit in retail quantities is prohibited on that day, retailers advertise the position as much as possible and thereby obviate any inconvenience to the public.—Edw. W. Thompson, Secretary, Melbourne & Metropolitan Fruiterers' Association.

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Sour soil means small returns. Results have proved that "Bull-dog" Lime will turn unprofitable land into a paying proposition. Crops and pastures will not thrive where soil is deficient in lime. This fact is becoming more appreciated by Farmers and others who use

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Melbourne, Sydney, Leeton, Newcastle Etc.

VEGETABLE CULTURE

VEGETABLE CULTURE

(By "Syringa.")

Set Out Cabbage and Cauliflower Plants This Month.

AS THE GROUND will shortly commence to get cold it is advisable to get plants of the above vegetables set out as soon as possible, thus enabling them to make as much growth as possible whilst the ground is still warm.

The ground for Cabbages should be dug as deeply as possible, adding plenty of manure, as they are gross feeders.

When planting out Cabbage plants it is a good plan to cut the leaves back by half; this curtailing of the foliage relieves the root functions somewhat, with the result that the plant soon becomes thoroughly established and new growth quickly follows. If the plants are "leggy" or drawn out, set them so that the lower leaves are just above the surface!

Plant Cabbages in rows two feet apart with eighteen inches between plants. Cultivation greatly aids steady growth. Moisture is another essential and occasional light dressings of nitrate of soda will work wonders.

Cauliflowers should be planted in as open and moist part of the garden as possible. Where it is not possible to get both open conditions and moisture, the latter is preferable, but care must be taken that the ground is well drained. They require more fertilisers and culture than Cabbages, as only those Cauliflowers are really good which are grown quickly. Copious water applications during dry weather, and light dressings of nitrate of soda and potash are of much help. Plant in rows two feet apart with eighteen inches between plants.

Two diseases which affect Cabbage and Cauliflower plants during autumn and winter are club-root and shot-hole leaf. Club-root is a disease of parasitic fungous growth, and there is really no remedy that would justify the assumption of subsequent expenses. Better pull up and burn the entire lot of plants and replant from an unaffected bed, planting in a different position.

Club-root is usually caused by the use of rank manure or by constant cropping the same land with Cabbage.

Shot-hole leaf disease is caused on Cabbage and Cauliflower plants by the Cabbage moth.

The use of "Grubbo," a special preparation, on the young plants will ensure them keeping clean. After planting out give a light dusting in the centre of the plants two or three times at intervals of two or three weeks, until the plants commence to show signs of making hearts. Plants treated in this way will give good results. This preparation must be applied when dew is on the plants or if no dew, create a moisture on the plants by use of a sprinkler or hose before applying. Do not, however, use in wet weather.

Sowing Notes.

For winter **Lettuce** sow now in a sunny position the **All the-Year-Round** variety, which stands the winter well.

A couple of sowings of **French Beans** may still be chanced this month, one early in the month, and the other a fortnight later.

Make sowings of **Early White** and **Silverskin Onions.** Give plenty of manure.

Non-seeding White Turnip is a reliable variety for present sowing, and the **Orange Jelly** variety, if sown now will stand right through the winter.

PORT OF LONDON

The World's Best Fruit Market

Sales can always be depended on for best quality fruit, at highest prices.

Besides its own vast population, London supplies most of the seaside resorts. Vast bodies of tourists make London their headquarters, and want the best of all produce.

London has always been the centre of the Australian and New Zealand fruit trade, and although many efforts have been made to divert it to other ports the presence of its huge local markets with expert distribution agencies, will ensure it remaining so.

Mr. J. W. Barker, a well-known Victorian fruit exporter just returned from a trip, writes on the new fruit market in London, as follows:—

"The facilities for handling are second to none in the world. Every convenience for the sales and showing of fruit are provided, all fruit is sold by auction." And he found that the brokers always looked to the growers' interests.

All particulars as regards charges, etc., can be obtained from:—

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ESTABLISHED IN

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A Population of 40 million people, all large fruit eaters, is reached through these centres.

Some Good Reasons why Australian Fruit should be sent to

LIVERPOOL, MANCHESTER, AND HULL

(1) These ports serve the large populations in the North and Midlands of England, also Scotland, Ireland, and Continental Markets.

(2) Some of the largest coal fields are situated in these centres; the hard-working population are big fruit-eaters.

(3) Quick unloading and despatch of fruit are provided.

(4) Cold storage facilities are available.

(5) Direct shipments to Liverpool, Manchester and Hull save extra handling charges as is the case when fruit is transhipped from London.

(6) Shipments should be made to T. S. Johnson & Co., because they give you the choice of the three ports and their efficient Selling Organisations which are established therein.

(7) T. S. Johnson & Co.'s regular circle of buyers and wide distributing channels enables them to secure highest prices.

(8) The way to develop new markets is to concentrate on those British outports which are earnestly striving to increase their trade in fruit with Australia.

WRITE FOR ADDITIONAL INFORMATION.

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AGENTS WANTED FOR SOUTH AUSTRALIA AND WEST AUSTRALIA.

Fluxit Fixator and "Crystol 85" are being advertised in this issue by Messrs. Lawfords' Fruit Exchange Pty. Ltd., Doncaster, Victoria. "Crystol 85" kills red scale, black, brown and olive scale, white wax scale, white louse, codlin moth eggs, red spider, Peach aphis and Cherry aphis.

A salesman who cannot carry a cross will never wear a crown.

"So you've been married before, Mrs. Tubbs?"

"Yes, ma'am, three times, and if it pleases 'eaven to take this one, I know where I can lay my hands on a fourth."

* * *

A woman may bestow her hand on a man, but for ever after she keeps him under her thumb.

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Size 22 x 24, waggon size only, includes ropes, other sizes, ropes 3/6 extra per cover.

Special Sizes Made to Order.

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It gave me the power of 260 pairs of hands in a simple and compact form; the lever is short, so that I am able to stand firm-footed and get the full stroke. There are two speeds in the machine, as well as an automatic release that allows me to let off a strain, or as the machine will work in any position, it comes in for all jobs that would require a chain block. It is taken to the job on a pair of wheels like a barn truck, and is rigged for work in a few minutes. The ropes are in lengths that I find easy to handle, and each one is fitted with hook and loop couplings, so simple and absolutely IT for effectiveness. The makers have included a sturdy snatch block with a novel method of securing to the ropes, and also a fine type of firm gripping rope shortener. The latter makes it very easy to accommodate the lengths of rope to the tree or stump being pulled, and is quickly released from the rope. The combination of so many time and labor saving features makes the "Monkey" Grubber a superior grubbing outfit.

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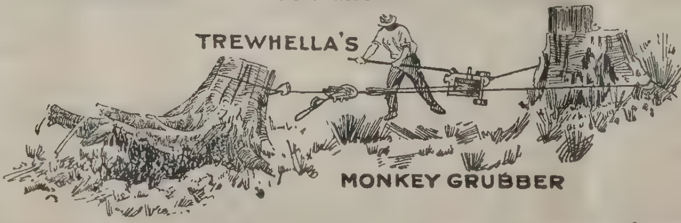

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The port which has more consumers within 75 miles radius of its markets than there are in the corresponding radius around London.

This enormous population requires large quantities of imported fruit and other produce, and much of that which is landed in London and other ports is ultimately railed or transhipped by steamer to Manchester markets for distribution. The producer pays (directly or indirectly) the extra transport charges involved, plus the original importers' commissions and profits.

With few exceptions, the average prices realised at Manchester for Australian and Tasmanian Apples are higher than at any other British port; price records extracted from the Weekly Market Reports (issued by British Ministry of Agriculture), as also addresses of Manchester fruit brokers and merchants, and all other information re port and selling charges, etc., will be supplied on application to:—

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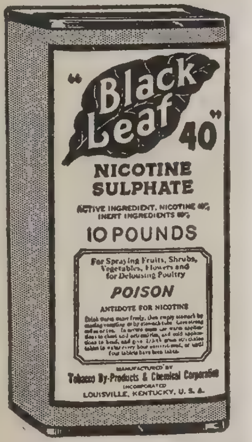
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"Black Leaf 40" has the endorsement of Agricultural Colleges, Experiment Stations and Orchardists. It is the world's leading Aphis specific.

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IN THE CITRUS ORCHARD.

Seasonable Hints for N.S.W.

BOTH FUMIGATION AND SPRAYING may still be carried out for the extermination of scale insects on citrus trees, Fumigation is recommended by the N.S.W. Department of Agriculture, more particularly where red scale and white louse are present. Oil sprays are not sufficient in the case of the louse, but if thoroughly applied will control red scale.

* * * * *

Citrus growers whose soils are shallow or subject to erosion could, with profit, resoil part, at least, of their orchards. Carting in bush scrapings and ploughing up and carting in the surface soil from adjoining paddocks are worth-while practices.

Dead wood on citrus trees should be pruned out, and so lessen the likelihood of the green fruit being scratched, thereby marring its appearance when ripe.

* * * * *

In localities not subject to severe frosts citrus trees may be planted during the next few weeks.

VICTORIAN CITRUS CROP.

Equal to Last Year.

Mr. S. A. Cock, Victorian Government Citriculturist, advises that the coming citrus crop in Victoria is equal to that of last season in all varieties, both as to quality and quantity.

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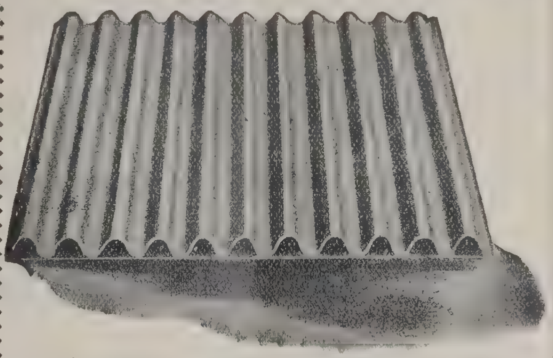

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TYABB.

THE TYABB CO-OPERATIVE Cool Store and Trading Co. Ltd., is having a satisfactory season. That the directors and secretary hold the confidence of the sixty shareholders is shown by the fact that they have held office for six consecutive years.

The company's cool store, which is electrically driven and uses a Werner compressor, has a capacity of 20,000 cases. The dry air system is used in the four chambers which make up this capacity.

A special chamber, with a capacity of 2,500 cases for Pears only, and worked on the direct expansion system, has been found most satisfactory and profitable.

The cost of storage of all fruit has been reduced to 1/5 per case this year. This charge covers storage, insurance of fruit and buildings, and pays off a percentage of the capital.

The present directors are Messrs. T. W. White (chairman), Geo. Shepherd, jnr., H. H. Hawken, G. A. Grant and C. T. Iles. The Secretary is Mr. T. E. Butler, and the engineer, Mr. H. Hilton.

NEWS AND NOTES.

All the Apple and Pear exporting States have now joined the Australian Apple and Pear Export Council.

At the conclusion of the present export season the first meeting of the Council will be held, when details regarding export will be discussed, also matters of policy and the grading regulations.

The late Mr. P. J. Carmody.

DEATH OF MR. P. J. CARMODY.

Previously Chief Orchard Supervisor, Victoria.

HORTICULTURISTS throughout Victoria will regret to hear of the death of Mr. P. J. Carmody, late Chief Orchard Supervisor, Department of Agriculture, a position which he held for 15 years before his retirement some five years ago. Before entering the Department the late Mr. Carmody was a State school teacher. After serving as an inspector under the Vegetation Diseases Act, with others, including Mr. Meeking, Mr. Cock, and the late Mr. Cronin, Mr. Carmody was appointed Chief Orchard Inspector, a title which was subsequently changed to Chief Orchard Supervisor. The late Mr. Carmody's thesis on the cultivation of the Apple is valued to-day as a standard work. As a departmental officer administering the Vegetation Diseases Act, Mr. Carmody was appreciated by the Governments and the growers, his genial personality winning many friends, and his passing is widely regretted.

PINUS INSIGNIS.

How Should it be Cut for Case Timber?

Will some kind reader of "Fruit World" advise me as to best method of dealing with Pinus insignis trees for cutting into case timber? The writer has a number of these trees about 25 years old, which have been growing as a shelter belt around his orchard.

Is it advisable to mill straight from the stump, or should the logs be partly dried?

What type of saws are best for the purpose?

Any information will be thankfully received.

"KURRAJONG."

N.S.W., 24/3/31.

PERSONAL.

Mr. D. Farmer, of Red Cliffs, was recently appointed organiser of the Australian Dried Fruits Association. This is in succession to Mr. R. M. Eldridge, who has accepted a position in Canada.

* * * * *

Mr. W. E. Kirkness, of Gosford, N.S.W., was recently presented with an illuminated address conveying the appreciation of the fruit industry for his many years of valued service.

ALL FOR AUSTRALIA LEAGUE.

A Nation-wide Movement to Restore Confidence and Prosperity.

The slogan adopted by the All For Australia League—"National Integrity, Security, and Service"—epitomises the principles for which the movement stands. Too long have the people of Australia tolerated the affairs of Government being used for the furtherance of political interests without regard to the well-being of the nation as a whole.

Australia's name at present stands perilously close to being discredited, and the prestige, respect, and admiration so dearly bought on the battlefields of Galipoli, France, and Mesopotamia, is in jeopardy.

One great need to-day is sane and prudent management of Government affairs. Political intrigue and actions savoring of sharp business practice can only bring their just rewards—the contempt and abhorrence of all things Australian amongst those nations who have hitherto given us help and sympathy.

But fortunately there are public-spirited men who can forsee the dangers to which we are heading. These men banded together a short time ago to constitute themselves as the nucleus of a League which would demand in an authoritative voice that Australia's reputation should be safeguarded at all costs. The All For Australia League is not a political organisation; or, rather, it is all-political in the sense that its principles rise superior to the limited confines of party interests, and are concerned entirely in the vital issues of restoring confidence and prosperity.

Membership in the League is increasing almost faster than the members can be enrolled, which indicates that an overwhelming majority of Australians place national honor before the insidious temptations of those who suggest easy ways out of our difficulties.

The support of fruitgrowers would be particularly welcome in view of the reforms which the League is desirous of achieving. This is expressed in one of the League's pamphlets as follows:—

> "The prompt modification or withdrawal of Government control or interference in the marketing of primary products, where such has proved disastrous or inadvisable; and the granting of utmost freedom and facilities to producers and contributory services so as to enhance Australia's share of world trade."

Other objects are:—

1. To create a unity of purpose amongst citizens and organisations to meet the economic and social crises.
2. To exert constitutional pressure on Governments in support of the following or other necessary measures:—
   (a) Restoration of national credit.
   (b) Economy of Governmental administration and expenditure.
   (c) Balancing of Federal and State budgets.
3. To set aside conflicting sectional interests for the sake of unity of purpose.
4. To conjoin the interests of country and city; that is, all producing and consuming interests.
5. To bring about the wholehearted co-operation of employer and employee in industry.

The Victorian headquarters of the League are located at 349 Collins-street, Melbourne, C.1, from which address literature and membership forms may be obtained.

Spraying and Manuring Tests in South Australia

Some Orchard Experiments in the Lights Pass and Angaston District, with Special Reference to White Oil Spraying and to Manuring of Apricot Trees.

(An address by John B. Harris, Orchard Instructor, Northern District, before the recent Conference of Agricultural Bureaux at Angaston, S.A.)

IN INTRODUCING these subjects I wish to state that the suggestion of carrying on experimental orchard plots in this district emanated from the Lights Pass Agricultural Bureau, as they desired experiments carried on under their local conditions, and where the progress of the experiment could be frequently examined.

Following upon the experimental work with summer oil sprays carried out at the State Experiment Orchard during the 1927-28 season, and the address by Mr. Small to the Lights Pass Bureau, it was finally decided that experimental spraying with white oil should be carried out in the orchard of Messrs. S. and L. Plush, under the supervision, so far as possible, of the local Horticultural Instructor.

Messrs. P. and F. Warnecke, at Nuriootpa, and Mr. F. H. Lock, at Angaston, also used white oil fairly extensively as a spray to combat codlin and other pests during the past season, and reference is included later in this paper to some of their observations.

Experiment in Mr. Plush's orchard:—

For purposes of comparison, results from three plots: A, B and C, are given, each plot consisting of ten trees. Each plot received five sprayings during the past season, the dates of spraying being:—First spray, 18/10/29; second spray, 4/11/29; third spray, 4/12/29; fourth spray, 23/12/29; fifth spray, 25/1/30.

Plots A and C were each sprayed five times with arsenate of lead, mixed as 1 lb. of paste to 15 gallons of water.

Plot B was sprayed thus:—

First spray, arsenate of lead, 1 lb. to 15 gallons of water.

Second spray, 1 gall. alboleum in 50 gallons of water.

Third spray, arsenate, 1-15 plus alboleum, 1-50.

Fourth day, with 1 gallon alboleum in 50 gallons of water.

Fifth spray, with 1 gallon alboleum in 50 gallons of water.

Plots B and C are alongside each other. Plot C being the one on which molasses trapping tests have been carried out during the past four years.

Plot B may have derived some slight benefit from this trapping.

Plot C almost certainly has.

Plot A is a check plot or comparative plot in another part of the orchard. All the trees have been bandaged and the grubs in bandages destroyed periodically.

Plot A.—The comparative plot sprayed arsenate of lead only, picked 46 cases of Apples, of which 26 cases or 56 per cent. were codlin infested.

Plot B.—Oil and lead arsenate sprayed, picked 69 cases of Apples, of which 8 cases or 11 per cent. were codlin infested.

Plot C.—With five lead arsenate sprayings, and molasses traps, picked 78 cases of Apples, of which 25 cases or 32 per cent. were codlin infested.

It has been suggested that Plot A sprayed arsenate of lead only, owing to its situation in the orchard, does not provide a fair standard for comparisan with Plot B, which was sprayed oil and arsenate of lead. Without further discussing that point, let us compare Plots B and C, which are situated immediately alongside each other in the same block of trees.

Plot C, with five arsenate sprayings, had the advantage of a

molasses bait trap

in each tree, and the experience of the past four years has indicated that these traps are definitely helpful in producing a greater percentage of clean fruit.

Plot B sprayed arsenate of lead, and oil, had no such advantage, but produced 21 per cent. more clean fruit than Plot C.

Taking the average crop from Plot B and C as 73½ cases, the proportionate increase from Plot B is rather more than 15 cases or 1½ cases per tree.

The cost of spray material per tree, allowing two gallons of spray per tree each spraying, was: Plot C, approximately 6½d. per tree for the season, and Plot B, arsenate and oil combination, approximately 3d. for arsenate of lead at 10d. per lb., and approximately 1/- for alboleum, at 7/6 per gallon, equals 1/3 per tree.

Therefore the increased cost of the spray using alboleum and arsenate combined, is 8½d. per tree. The value of the increased quantity of clean fruit in this case was 6/- per tree.

This merely embodies the result of one season's test, carried out on 20 trees, and though the results should not be taken as conclusive, they should encourage further investigation by practical growers, in addition to further experiments along these lines.

Dr. Pettey, Entomologist to the Department of Agriculture in South Africa, has drawn attention, in a recent Bulletin, to the danger of fruit being damaged by summer oil sprays. The characteristic damage of which he speaks—a discoloration of the skin in the vicinity of the calyx has been noticed only on certain varieties in South Africa, and in this district has been found only on Strawberry Pippin Apples in Mr. Lock's orchard, although other varieties, namely Rome Beauties, Northern Spys, Jonathans, and Dunns were sprayed with the white oil.

Messrs. Warnecke Bros. concentrated their applications of white oil on portions of their orchards where woolly aphis and red spider were prevalent. The control of these pests as of codlin, is stated to have been satisfactory.

Manurial Tests With Apricots.

Fruit harvested from manured and from unmanured Apricot trees at Lights Pass, seasons 1929 and 1930.

A TEST to determine so far as possible the effect of superphosphate applied to Apricot trees was commenced in the orchard of Messrs. S. and L. Plush, near Lights Pass, in September, 1928. The block selected for the purpose is situated alongside the road running from Plush's Corner to Stockwell, and consists of 56 trees about 15 years of age, the trees being approximately the same in size, vigor, and general cropping capacity.

The soil, which shows very little surface variation throughout the block, is a red sandy loam.

To provide a basis for comparison, the plots were set out so that certain groups of trees were left unmanured, and between the manured and unmanured groups of trees rows of barrier trees were left to utilise any dissolved fertiliser which might flow in a lateral direction from the manured to the "check" or unmanured plot.

All manures applied have been broadcast by hand on an area corresponding roughly with the spread of the branches of the tree to which the manure was being applied; the manures being immediately harrowed in. The first application of fertiliser: 6 lbs. of superphosphate, 45 per cent. W.S.P. was made on September 20, 1928. Good cultivation was maintained throughout the season, which was exceptionally dry. The manured trees ripened the bulk of their fruit rather earlier than the trees not manured.

The 20 trees which received an application of 6 lbs. of 45 per cent. W.S.P. on September 20, 1928, produced in January, 1929, 53½ cases of fruit, an average of 2.675 cases per tree. The 15 trees which received no manure produced in January, 1929, 43 cases of fruit, an average of 2.866 cases per tree. The manured trees thus produced approximately 12 lbs. per tree less fruit than those not manured.

The test was continued during the 1929-30 season, but a variation was made on the manured plot which contains eight trees, by the addition of sulphate of ammonia, at the rate of 2 lbs. per tree, to each of the eight trees in the smaller manured plot. It was considered, after the experience of the previous year, that 12 trees treated with superphosphate only, would sufficiently indicate the effect of that manure, and eight trees treated with superphosphate and sulphate of ammonia, would indicate the influence of sulphate of ammonia.

All the manured trees received 6 lbs. of 45 per cent. W.S.P. on August 30, 1929. The eight trees in the smaller plot received 2 lbs. of sulphate of ammonia per tree on October 7, 1929.

The following are the quantities of fruit harvested from the plots:—

12 trees with superphosphate only, produced 47 cases or 3.916 cases per tree.
15 trees with no manure, produced 62½ cases, or 4.166 cases per tree.
8 trees with super and sulphate of ammonia, produced 35½ cases or 4.437 cases per tree.

Expressed in another form on the basis of 54 lbs. of fruit per case:—Trees which received super only, produced an average of 211 lbs. 8 ozs. per tree. Trees which received no manure produced an average of 225 lbs. per tree. Trees which received super and sulphate of ammonia, produced an average 239 lbs. 10 ozs. per tree.

The experience of the past two seasons tends to show that these Apricot trees do not benefit by the addition of superphosphate alone. Sulphate of ammonia and superphosphate used in conjunction have given an increase during the past season, when tested on eight trees, of approximately ½ case (28 lbs. 2 ozs. exactly) of fruit per tree over those trees manured with super only, and an increase of 14 lbs. 10 ozs. over trees which received no manure.

The results obtained so far in this test are not intended to be conclusive, the test is being continued, but the results so far obtained may be of interest, and serve as a guide to others in this district who are interested in the manuring of Apricot trees.

Further orchard experiments which are being conducted under the auspices of the Branches of the Agricultural Bureau in this district relate to codlin moth trapping. Manuring of Apple trees with sulphate of ammonia and a pruning test on Apricot trees which has been instituted by the Chief Horticultural Instructor.

* * * * *

Note Apricot manuring results season 1930-31:—

12 trees with superphosphate only, produced an average of 135 lbs. of fruit per tree.
15 trees with no manure produced an average of 170 lbs. of fruit per tree.
8 trees with 6 lbs. super and 2 lbs. sulphate ammonia, produced an average of 206 lbs. per tree.

* * * * *

Appreciation is expressed for the assistance of Messrs. S. and L. Plush, in the conduct of the manurial experiment.

BANANA LEAF SPOT.

BANANA GROWERS ARE WARNED to be on the look-out for this disease, which is likely to make its appearance any time from now on, and to increase in severity as the weather gets colder (states the N.S.W. Department of Agriculture). It is first seen in the older plantations, especially if they are located in low-lying and cold situations. The bottom leaves are attacked first, and as each succeeding leaf weakens it becomes a victim to the fungus. Eventually all the leaves may succumb and the bunch be left hanging on a bare pseudo-system.

Remove Dead Leaves.

All leaves which have finished functioning, as well as all diseased leaves, should be cut off and destroyed to decrease infection. Trashing of the plantation in this fashion and correct cultural methods are the main practical means of control known at present, and should be commenced when the disease first shows up in the plantation.

The established idea that dead leaves should be allowed to remain around the stools during the winter months to act as a blanket and protect the plants from cold winds and weather conditions is difficult to substantiate and is losing favor among growers.

Apart from the disease control aspect, trash around the stools prevents sunlight and air from getting to them, and these are all essential in the winter time for the proper development of the plants and bunches.

Trash also smothers the suckers, and instead of strong, sturdy, well-formed followers, spindly, weak and stunted growth is likely to result.

DRIED FRUIT MOVIE.

A movie of the Dried Fruits Industry in Australia is being photographed by Mr. B. Ive. Mr. Ive recently took some exterior views of the Berri Co-operative Packing Union's shed, also some prominent views of the settlement.

The picture will commence with pictures of virgin scrub and show the effect of clearing and irrigation. All phases of growing, harvesting, drying, processing and packing of the fruit will be shown.

This film is being made for the Empire Marketing Board.

The Webbing Spider of Citrus Trees.

Suggested Method of Control.

(By S. A. Cock, Citriculturist.)

THE WEBBING SPIDER of citrus trees has been in evidence in the northern part of Victoria for the last twenty years. At some periods it has been more plentiful than at others, a fact that may be accounted for by control through natural enemies. Some time ago inquiries were made from Tresco and the Long Lake districts as to methods of control of the spider, and what was known about it in Victoria.

Accordingly, specimens were submitted to Mr. C. French, Government Biologist, who pointed out that the spiders spin webs in the citrus trees, matting leaves and small branches in small clumps. The leaves, etc., concerned, are unable to function, and die. As a tree may become virtually covered with these masses of webbing, it has a serious effect on its vitality.

Mr. French adds—

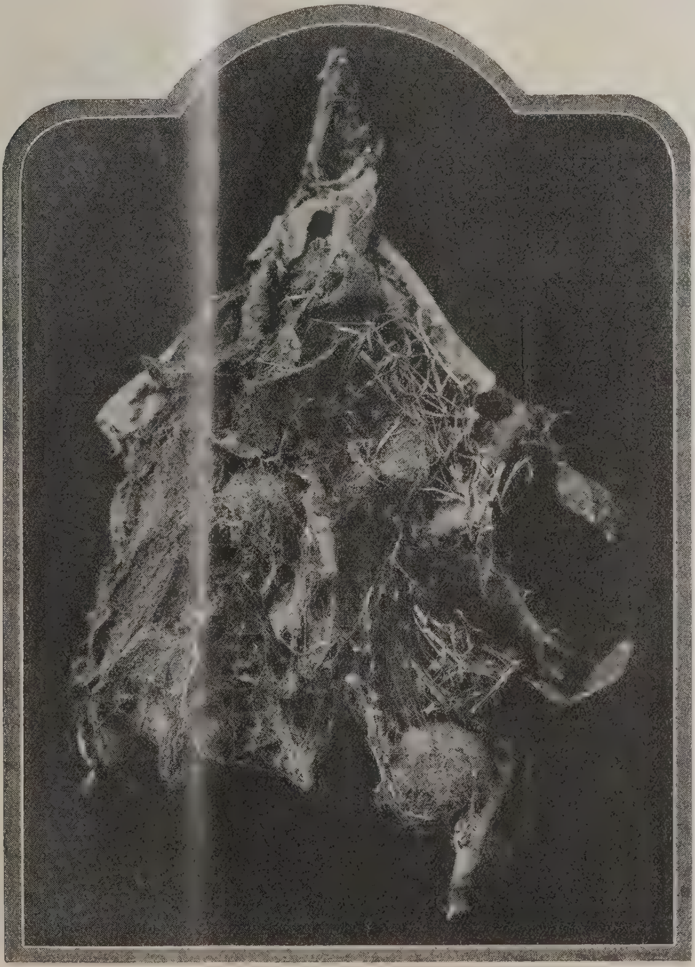
"Owing to the conspicuous nature of the pest, it is easy to see the beginning of an infestation in a grove when mechanical methods may be used and the trouble eliminated. If the seriousness is not realised and steps are not taken early in the infestation, it is extremely difficult to deal with, as no methods other than pulling off and burning seem to be effective.

"Spiders in webbing obtained from infested areas have been identified as Lampona obscoena, but the specialist in this group (Mr. S. Butler) states that he knows of no work relating to the economic aspect.

"Amongst the material obtained were a number of hymenopterous parasites on the spiders, and also large numbers of ants (Iridomyrmex punctatissima) which were apparently living on the eggs of the spider. These parasites are no doubt of considerable assistance in checking the spread of the spider, and it may prove possible to artificially increase the numbers of the parasite."

The methods of control

suggested by the biologist are identical with those which have been in operation for years past. Some growers, however, have been reluctant to undertake the work of tearing the webbing apart, and of collecting the debris and burning it. Further, the work is liable to injure the hands unless they are protected, and this has made some



A spray of fruit from a citrus tree infested with webbing spider.

Illustration by courtesy "Journal of Agriculture," Vic.

people avoid the work. However, despite these strenuous methods, the pest has increased. In order to find an easier method of dealing with the pest at Long Lake, Mr. D. D. Brown, citrus supervisor, of Swan Hill, during the past twelve months has given intensive attention to the habits of the spider and to control methods by sprays, etc. His report is given in full hereunder:—

"During the last few years the webbing spider (Lampona obscoena) has been attacking Orange and Lemon trees in the Long Lake district, and to a lesser extent in Tresco and Murrabit. The spiders are a light grey in color, about one-quarter of an inch long.

Although not actually attacking the trees themselves, they spin their webs in them, and by at first webbing one or two leaves together, gradually increase until leaves and branches are included and bunched together in a large unsightly mass. These webs vary in size, many, in neglected cases, being two square feet in extent, and when a dozen or more of them may be seen on an average size tree, the effect can be imagined.

Twigs and leaves are choked through lack of air, and die, the fruiting of the tree is interfered with, while in some cases scale insects are encouraged in the dark and shady surroundings of the webs, and spread rapidly to other parts of the tree. If allowed to spread, the

spiders retard the trees' growth

so much that they soon become unprofitable. Realising this, some growers cut off or tear out the webs by hand, and burn them in a tin vessel carried round for that purpose.

There are objections to this method of control, as it is slow and uninviting, and if the work be carried out carelessly, many spiders, especially in the tearing-out process, escape to the ground; they them make for the trunk of the tree and climb up on the limbs again. In the spring hundreds of young spiders may be observed thus escaping from any disturbed web.

"The spiders are not so active during the winter. Eggs —100 or more—are disposited in characteristic spider sacs and hatch out in the spring, usually about the end of October, but breeding continues more or less throughout the year. From then on during the summer they are very active, spreading from tree to tree in web fashion, and their webs will collect on the face, hands, and clothes of any one walking among the trees, especially in the evening or on a still, cloudy day. Their food is any winged insect caught in the web. Observations that have been made discount the idea that they attack scale pests; on the contrary, as already stated, the scale seems to multiply in the webbed mass.

In an endeavor to find out some more effective means of control, experiments have been carried out with various substances and solutions, such as butyl alcohols, sodium and barium dusts, poisonous baits, arsenic, kerosene, and pyrethrum. Although it was found that most of these gave more or less satisfactory results, once they came in contact with the insects, the trouble was to penetrate the remarkably effective protection offered by the webs, before a "commercial kill" could be obtained.

The best results

obtained so far have been with pyrethrum, kerosene being used as a base; the kerosene acts to a certain extent as a penetrating agency, and the pyrethrum as a toxic. When sprayed on very small webs consisting of a few twigs or leaves bunched together, it was found to have sufficient penetrative action to reach and kill the spiders contained therein. On large webs the kill depended on the penetration of the spray, but if the web was torn apart before being sprayed, practically every insect hit was killed within a few minutes. Escaping insects were killed by spraying them below the webs as they spun to the ground.

"Based on these tests,

a thorough spraying

towards the end of October, when the insects were young, gave an 80 per cent. kill, and another about three weeks later, in order to catch the later hatch and those missed previously, gave effective control. On those groves where the pest is bad, a further application may be necessary.

Owing to the necessity of directing the spray into localised areas on the trees, and to avoid wetting the assistant while he was opening the web, the use of power sprays is not recommended. As pyrethrum is expensive, it will be found more economical and efficacious to use a small hand spray which could be held as close as necessary to the opened web, and directed wherever required.

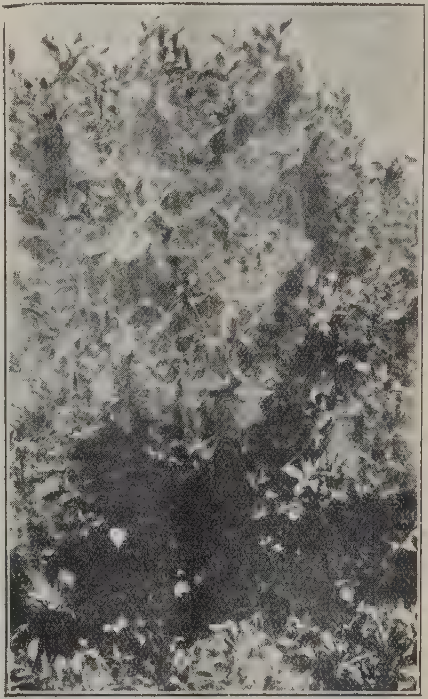


Illustration "Journal of Agriculture," Vic.

Webbing Spider on a citrus tree at Long Lake.

The spray mixture is prepared

by heating 4 oz. of soap in 2 pints of water, until dissolved. When dissolved and in its heated condition, add 2 pints of kerosene and emulsify until the solution is of the constituency of cream, after which dilute to 3 gallons of mixture by the application of water. To this slowly add one and a-half pounds of pyrethrum, and mix thoroughly while adding until dissolved. The spray should be used as soon as possible after mixing. Three gallons of the mixture will spray many trees if applied to the affected portions only. It is recommended that a cool day be selected for the work, as the kerosene solution—one in twelve—is fairly strong and liable to burn if used during hot weather. A weaker mixture—one in fifteen—would guard against leaf burn, but this will weaken the spray's penetrating powers, and render it less effective."

The results obtained by Mr. Brown in these tests show considerable promise, but it is proposed that further experiments on the control of this pest shall be carried out in the near future.—"Journal of Agriculture," Vic.

The Problem of the "Off" Year in Apple Cultivation.

(Paper read by Mr. H. N. Wicks, Balhannah, Vice-Chairman South Australian Advisory Board of Agriculture, at the Forty-first Annual Congress of the Agricultural Bureau.)

APPLE PRODUCTION within the Commonwealth has grown during the last few years to such an extent that it now holds a very important place in the production of wealth. With the growth of the industry there came the increase in pests and natural enemies of the Apple, which, of course, have, and will increase proportionately as the industry grows.

Being a young country, our present list of pests and diseases is a very formidable one indeed, but, nevertheless, is very small compared with some other parts of the world, where Apples are grown as a commercial proposition. With the coming of these pests also came the knowledge with regard to the control of same, so that at the present time, thanks to the scientist and chemist, there are few, if any, diseases or pests which the commercial Apple grower would admit were of such significance as to warrant the abandonment of his business of Apple production, and yet it is only a few years ago when orchards of considerable size in South Australia were grubbed up and destroyed, owing to the belief that the codlin moth was destined to make Apple production an utter impossibility. The chemist, the entomologist, and the scientist combined have not only exploded this belief, but have given us—with the help of the engineer—machinery and formulas which have enabled the business to develop to its present dimensions in a very few years.

It would seem, therefore, that we are at least not retreating in regard to our warfare on the pests and diseases which trouble our trees and fruit, but, nevertheless, endless care and watchfulness are necessary to success, which means, of course, endless expense of time and money.

To recuperate this time and money by putting the fruit on an unprotected market overseas in competition with fruit from all over the world, is quite a problem, and the net returns from Apple culture during the past few years have diminished very considerably.

The query then arises, "How are we to continue fighting these pests and continue to make a profit, especially if, as I have already stated, the pests are likely to increase rather than diminish?" The answer is, "Produce more Apples from the same areas under cultivation," and this brings me to the real aim of this paper. I am quite aware that under certain conditions

increased crop production,

as regards Apples, may be affected by varying our pruning methods by better cultivation in dry years, etc., but it is not my intention to dwell on these matters, but to suggest some avenues of investigation which I consider well worthy of very deep and careful consideration, in view of the facts which I have so far collected.

The problem of the "off" year in Apple growing, in this State at any rate, is a very real one, and innumerable theories relating to pruning, etc., have been brought forward, but we are still under the influence of the alternation of the good and bad season, which during recent years have been most regular, and which have resulted in little or no export surplus every other season. That this is no good to any business needs no emphasis, especially when it is considered that we have recently adopted distinctive labels for our State, and the majority of the South Australian fruit is readily and easily distinguishable on the overseas market, and, I am glad to say, is making a very real name for itself as regards to quality.

It will be very apparent that this reputation will be very seriously discounted if we cannot keep up a continuity of supplies.

Let us look at it from the buyer's point of view.

Suppose we, as fruitgrowers, purchased an excellent brand of spray which gave us eminent satisfaction for a specific disease, we would naturally turn to that particular brand every year; but if we found that we could only get it every two years, then, rather than keep changing over, we would adopt another line, the best possible which would give us a continuity of service.

This is exactly what is happening over the other side with regard to our Apples. It will then be apparent that for the time being it will probably pay us to study this problem of "off" seasons very carefully, and leave no likely avenue of investigation unexplored. The necessity for

continuity of cropping

is realised by practically all orchardists, and in numerous cases the practice of burning off the blooms is resorted to. This, to my mind, is a very extreme measure, and, apart from possible injury to the tree, is very evidently fundamentally wrong, because it still gives an entirely off season to the treated trees, and does not supply continuity.

During my experience as a nurseryman, which extends over a period of 25 years, during which time I have almost exclusively specialised in the propagation of deciduous trees only, I have had an opportunity of studying the natural habits of trees during the whole year through, and in quite recent years since concentrated nitrogenous manures have been procurable for stimulating growth, some remarkable facts have made themselves apparent, and it is to these that I wish to draw attention.

Some few years ago I found that an

application of nitrogenous manures

would, under certain conditions and given enough moisture, stimulate root growth as early as the end of May. That Apple roots are not dormant for more than about three weeks during any normal season has been common knowledge for years, and although underground growth is apparent in mid-June on nursery stock, and also on bearing trees, the growth is, under ordinary conditions, small and insignificant. Bearing this in mind, I have tried dressing the orchard with nitrogenous manure during May, and whether the manure was responsible or not I am not able to state, but the fact remains that the "off" season was not by any means bare, and quite a nice picking of fruit resulted.

This has happened for two "off" seasons in succession (twice in four years). It would seem that if the

root system of an Apple

can be so stimulated in May as to make rapid growth, the vitality so collected must go into the buds, there being no leaves to absorb any of the sap, and that this is so is borne out by my experience. This brings us to a critical point which I am quite unable to answer—"When does an Apple bud finally decide to produce fruit or leaves, as the case may be." This should be the first avenue of investigation in this vast question, and no doubt can be solved.

Stimulating Root Development.

However, to continue with some of my investigations.

This season (1930), on May 20, I dressed a patch of yearling nursery stock with about 3 cwts. of sulphate of ammonia to the acre. The result was phenomenal, and by the end of June a mat of young growth was visible, and some of the young rootlets, which were quite white and as tender as possible were over 7 in. in length. I would also like to point out that there was practically no rain during the period mentioned, although, of course, in our district there is always a certain amount of moisture available.

The usual practice with regard to the application of nitrogenous manures is to apply same in the early spring. This will help the fruit as regards size and possibly color, stimulate the tree, and enable it to carry its crop without suffering too much. The latter is very necessary to successful Apple culture; nevertheless, to my mind, it is essentially and completely utilised on the fruit and foliage being produced at the time of application, as it is a quick-acting manure. I do not wish for one moment to decry this practice of spring manuring, but, on the other hand, cannot too highly recommend it. It is possible that we have taken things too much for granted in this connection, and expect a prolonged service which we will never get from one application of nitrogenous manure?

Having proved beyond question that root development on Apple trees can be stimulated into very active operation during autumn by artificial means, it would seem to me that this growth must perforce

assist bud development,

which takes place during the late autumn and winter months. Whether it can be made to assist bud development to the extent of producing fruit in the following year, I cannot definitely state, but this paper is written to ventilate the matter, and, personally, I think that there is, right here, an avenue of investigation which should not be ignored. I have very little doubt but that the crops of the ensuing year can more or less be affected by the application of the right manure during the autumn.

It would appear, therefore, that at least two points could and should be solved; firstly, the actual time of the season when Apple buds turn to fruit buds or leaf buds, as the case may be, and secondly, the definite effect of heavy dressings of nitrogenous manures during autumn in the most important Apple districts of this State. It would be necessary to extend these operations into several districts, and not confine them to any one area. Knowing only too well what it means to grow Apples for a living, I have no hesitation in stating that the job is certainly not one for the individual grower, because the necessary time is not at his disposal, but as any investigation which might tend to increase or improve our output is vital to the State's welfare, I think that our Government might very well be asked to undertake investigations in this connection.

It was essential for the grower to seek the assistance of the scientist in the conquest of the codlin moth and other diseases, because, unassisted, the grower was doomed to failure. Similarly we must now appeal to the scientific worker to help us solve the greatest problem, we, as Apple growers, have to face at the present time.

Some Other Avenues of Investigation.

THE SYSTEMATIC THINNING, both of spur wood, cluster buds after bud formation, and fruit after setting, especially the latter, should be tried out thoroughly. I am of the opinion that great good may result from a heavy thinning of fruit when an excessive crop has set, and the advantage of this avenue of control would be very definite, although, possibly, costly as far as the actual labor is concerned.

Providing the fruit is thinned at any time up to the period when the young fruits are as large as Cherries, I feel certain that some measure of relief with regard to the off season would result.

That this is so is borne out by the fact that this method of control is extensively practised by some of the leading orchardists of the Commonwealth.

One of the largest growers of Western Australia, considers thinning to be one of the season's operations of just as much importance as pruning or spraying, and the results obtained from this orchard are positively astounding with regard to regularity of cropping.

The Root Stock Question.

Then there is the matter of stock relationship to the tree. In Australia we have adopted the Northern Spy root stock almost entirely for the basis of our commercial orchards because of this stock's immunity from woolly aphis, and because of its thrifty habits and general hardihood, but as to its actual effect upon the tree itself we know nothing.

As a fruiting tree, however, the Northern Spy is notoriously shy until matured in years, and then is given to alternate cropping. Whether working

an intermediate variety

between the Spy and the tree itself would help us in solving this problem of off season I do not know, but certainly think it is an avenue worth exploring. That, under certain conditions, the stock has a very definite effect upon the tree, and that some of the characteristics of the former are transmitted to the latter is an established fact.

An examination of the Cherry section of the stock testing experiments which have been conducted at Blackwood, will prove that the stock transmits some of its characteristics to the tops with regard to growth, etc., and no doubt the crop records show that there is a great variance in crop results from one variety on the several stocks under test.

I have previously mentioned the matter of working an intermediate variety between the stock and the tree itself, and just to prove how a small intermediate variety will affect the top quote the instance of certain varieties of Pears which will not unite with the Quince stock.

As most of you are aware, the cropping qualities of some Pears are re-stimulated considerably by placing same on Quince stock, and this stock is used extensively for these varieties. Amongst those in this class is the Glou Morceau, which in some districts is notoriously shy on Pear root, but crops heavily and regularly on Quince root. Now, if we take a Duchess Pear and endeavor to propagate direct on to the Quince, failure will result, as the tree will die within a few years. However, if we place a Duchess bud into a Glou Morceau tree, which is on a Quince root, the Duchess will thrive even if, after cutting the Glou Morceau away to the bud of the Duchess, there is only an inch of Glou Morceau wood left, this will suffice to enable the Duchess to thrive and live to a ripe old age. I mention this merely to stress the influence of stock and intermediate varieties, and to urge experimental work in this direction.

The above mentioned are avenues which so far have not been exploited to any extent whatever, and, if it will not be considered presumption on my part, might I be permitted to make the following suggestion:—As certain of the sections of the Blackwood Orchard will perforce cease to be of value for any purpose whatever very shortly, as they have just about completed their natural life, namely Peaches, some of the Plums and Apricots, could not the ground which these will vacate be used for carrying on some of the tests outlined here? The necessary land, plant, and equipment to a large extent is available. I consider that the good work already done at Blackwood could be still further augmented to the betterment of the industry generally.—"South Australian Journal of Agriculture."

Some Interesting Comments.

On this subject, Mr. Frank M. Read, M.Ag.Sc., Senior Horticultural Research Officer, Department of Agriculture, Victoria, has made some interesting and helpful comments as follows:—

I have read with interest the article on "The Off Year in Apple Cultivation," by Mr. H. N. Wicks. His observations on the stimulation of root growth of Apple trees by autumn applications of soluble nitrogenous fertilisers are interesting, and certainly worthy of systematic investigation. If, too, fruiting in the off year can be increased by this means on other orchards and in other districts, the observations will be of the greatest value. I feel, however, that we should be very careful in the explanations we offer for the phenomena we observe; and one or two points in the article would appear to warrant some comment.

In the first place, it is usually found that growth and reproduction in the tree are brought about by quite different sets of conditions. So that we are not justified in assuming that, because we observe growth, the development of the reproductive organs is simultaneously benefited thereby. On the other hand, the weight of evidence would seem to point in the opposite direction.

Secondly, we should remember that the **development of buds** is dependent mainly on an abundance of those storage products elaborated by the leaves, and chiefly drawn from the atmosphere. To attribute to the products absorbed by the roots any more than their proper share in the process may lead us to erroneous conclusions. Further, the growth of roots during the dormant period is mainly supported by reserve food materials previously built up by the leaves; and deposited in the storage tissues. It is difficult, therefore, to offer any reason why growth of roots in the dormant season should aid the development of fruit buds for the following spring.

It would also seem from the general evidence available, that an autumn application of nitrogen could not beneficially affect fruit bud development for the following spring although it might quite possibly be washed a short distance down into the soil in winter and rise again in spring to aid in the setting of those blossom buds which formed. There is evidence that this rise and fall can occur in some of the Victorian soils.

There are also strong indications that nitrogen applied in the previous spring can exert a very marked effect on the growth of greenstuff during the following winter. This has been particularly noticeable in experimental plots on the property of Mr. C. H. B. Grant, Beaconsfield, Vic., and may indicate that the widely held opinion, that nitrogen dressings disappear quickly from the root zone, is, in certain cases, incorrect.

In conclusion, it might be said that no one can be dogmatic on the subject we are discussing; it is still very open indeed. Mr. Wicks is to be congratulated on the work he has done.

(A letter from Mr. Read bearing on this question appeared in the February "Fruit World," page 82.—Ed., "F.W.")

EXPORT GUARANTEES.

UNDER THE EXPORT GUARANTEE ACT the sum of £597,581/15/3 has been granted by the Federal Government to assist those engaged in the export trade. Details are as follows:—

Department of Markets.
Assistance Granted to December 31st, 1930, Under the Export Guarantee Act 1924-25.

Marston process for the preservation of citrus fruits	£292	7	6
Citrus fruits industry	935	7	6
Tasmanian hop industry	24,572	4	0
Doradillo Grapes	15,079	6	3
Canned fruits	93,223	19	7
Broom Millet	2,226	3	8
Special trade publicity	167,754	16	0
Ohanez Grapes	2,025	0	2
Herd testing	54,271	10	4
Payments to recoup the dried fruits advances account	230,859	0	11
Toronto Exhibition	2,406	11	0
Visit of Mr. Ranger to U.S.A.	500	0	0
Retention of services of Sir James Cooper in London	2,935	8	4
Payment to Council for Scientific and Industrial Research for storage and transport of citrus fruits	500	0	0

NEW METHOD OF COLD STORAGE.

The Quick Freezing Process.

REMARKABLE DEVELOPMENTS have been recently taking place in the United States with regard to the storage and distribution of fruit, fish and other foods.

A conference was held at the close of last year in New York City, attended by over 200 men and women, including representatives of the largest corporations and groups interested in the industry.

Summed up, the new process as regards fruit is that of quick freezing, which has been defined as—"A process from the point of view of time of freezing and low temperature producing a very fine crystallisation rather than a large one which will not break down the tissue, but merely expand it. Any process providing these conditions is quick freezing."

Some excellent papers were presented. This new quick freezing process is attracting much attention. It is recognised that much experimentation is necessary to perfect conditions in relation to fruit, this being a living product.

A Happy Pear.

Katie: "I will marry only a man whose income has at least five naughts."

Joe (a fruitgrower): "I am your man—mine is all naughts."

Brown Spot of Passion Fruit.

Recommendations for Control.

BROWN SPOT, "WOODINESS," and sclerotinia disease all seriously affect the production of Passion Fruit in New South Wales, but the first-mentioned condition is perhaps the most important. It is due to a fungus parasite which attacks all the above-ground portions of the plant, and, like all fungi, is especially favored by humid conditions.

As in most other cases of fungous disease,

spraying with Bordeaux

mixture is indicated as a means of control, but in order that such spraying shall be practicable in the case of mature vines, it is recommended by the Plant Pathologist (Mr. J. H. Simmonds) of the Queensland Department of Agriculture that they be systematically pruned. The investigations on which the recommendations are based cover a period of several years, and are the subject of an instructive article in a recent issue of the "Queensland Agricultural Journal."

The recommendations in brief are as follows:—

1. Train the Passion vines in a systematic manner right from the start, making sure that the main runners are kept well tied to their respective wires, as this facilitates subsequent pruning.

2. Prune back laterals at least once a year either before the flowers for the summer crop have formed if a summer crop is desired, or later if the intermediate and winter crop is most favored. A further trimming may be necessary after the vines have begun to shoot.

3. Follow the pruning with a Bordeaux spray of 6-4-40 or 4-4-40 strength. This spraying should be repeated once a month until the end of January, and then once every six weeks or two months until next pruning time. When mature fruit are on the vine ammoniacal copper carbonate may be substituted for the Bordeaux.

For the first eighteen months most attention should be paid to training the young vine.

Pruning alone, it is stated. has been shown to give very fair control of all ordinary outbreaks of brown spot; in fact, pruning is considered to be the major factor in the control of this disease. The effect which pruning has on the control of brown spot can be explained as follows:—

Benefits of Pruning.

1. Pruning stimulates the vine to healthy, vigorous growth.

2. The thinning-out process allows a free access of light and air to all parts and prevents the formation of a moisture-holding mass of accumulated runner and foliage. It also enables a spray if such is being applied to reach all parts of the vine.

3. Old stem (lateral) cinctures can be removed, and as these are a prolific source of spores, the spread of the disease is checked thereby.

4. Probably the most important influence is due to the fact that infection of a leaf with brown spot usually leads to early abscission (dropping of the leaves). In the unpruned vines these leaves tend to be caught in the tangled mass of foliage and runner, and it is an easy matter for spores associated with the spots to be washed on to further healthy portions. In a pruned vine, however, it is usual for infected leaves to fall to the ground, carrying any spores which may be present to a certain extent out of harm's way. In many cases spore formation has not taken place before the leaf falls,

It has further been shown that spore formation may take place on brown spot lesions after the leaf has become detached from the stem and even after the leaf has commenced to dry up, thus disclosing an additional source of danger in leaves held in the vine. It is common to find more or less concentrated patches of dead and dying leaves suggesting an origin from a single source, such as a spore-bearing leaf remaining in the vine.

It is often observed by growers that Passion vines growing wild on the borders of the scrub are affected little by the disease. This can be explained partly by the isolation from sources of infection and also by the fact that a vine growing under these conditions rarely makes a dense growth.

Stimulus to Fruit Production.

A further advantage to be derived from pruning is found in the stimulus given to fruit production, and in the better quality of fruit obtained. It is possible to very considerably increase the quantity obtained from intermediate and winter crops when prices are at their best. The main arguments against pruning are the time and labor involved, and the fact that it is usually necessary to sacrifice a portion of at least one crop during the pruning process. As regards the sacrificing of a portion of the summer crop, it is usually found that the added return from the off season fruit more than compensates for the previous loss.

The writer compares the acre returns in recent years in Queensland from Passion Fruit and Grapes, which show that from Passion Fruit to be appreciably the greater, and suggests that it would be possible for the Passion Fruit grower to devote with advantage more time to pruning and spraying, such time being spent as a matter of course in Grape cultivation. It is doubtful, in fact, it is stated, whether Passion Fruit growing will ever be placed on a satisfactory basis until the present haphazard methods give place to ones more comparable to those devoted to the culture of other fruits.

Precautions Regarding Woodiness.

A word of warning is given to those growers who have the disease known as woodiness in their plantation. Woodiness has recently been shown by the Biologist of the New South Wales Department of Agriculture to be a disease of the virus type, which may be transmitted from a healthy to a diseased vine by mechanical means, such as possibly the pruning knife or even the hand.

Careful examinations of the plantation should therefore be made toward the end of the winter, when woodiness will be showing up, and any plants exhibiting symptoms of this disease should be cut off at the base so that the vine will have died and dried out before pruning time. Should a plant that has been missed be met with when pruning, the knife and hands, if used on a diseased vine, should be washed well in methylated spirits or soapy water before passing on to a healthy plant.

Hubby Knew the Difference.

Jones: "Women, in my opinion, are different now from what they used to be."

Bones: "How's that?"

Jones: "There's my daughter, for instance—she's taking up the law, whereas her mother always lays it down."

Frozen Fruit — A New Industry.

Peaches—Cherries—Orange Juice—Apples.

The "Quick-freezing" Method Has Proved Very Satisfactory in U.S.A.

AN ENTIRELY NEW DEVELOPMENT has taken place in the United States of America in regard to the handling of fruit.

By what is now known as the "quick-freezing" method it has been found to supply delicious Peaches, tree ripened throughout the year.

Marvellous strides have been made in the handling and distribution of Cherries and Orange juice, while new avenues of distribution for Apples have been opened up.

Experiments are being made in the "quick-freezing" of other fruits.

* * * * *

The freezing of Strawberries—particularly on the U.S.A. Pacific Coast—has been a commercial practice for many years.

Frequent references to this subject have appeared in the "Fruit World." In our February issue we published the views of Mr. G. B. Tindale, B.Ag.Sc., Cold Storage Investigating Officer of the Victorian Department of Agriculture, giving his successful experiences with the freezing of Strawberries and Passionfruit pulp.

Frozen Strawberries—and other berries—have been mainly used by the bakers, confectioners and ice-cream people.

By means of the new process—quick-freezing—the fruit goes direct into the homes of the consumers.

* * * * *

At the Frozen Foods Conference, held in December last in New York City, a paper was read by Mr. W. R. Tucker, an executive of the Atlanta, Birmingham and Coast Railroad. In the course of this paper, Mr. Tucker says:

I propose to deal with my subject in the concrete rather than in the abstract, and must necessarily speak in the first person so often that it may seem that I arrogate myself some authority and a degree of technical knowledge that I do not possess. It is not only true that "Fools rush in where angels fear to tread," but also true that laymen rashly venture, and sometimes successfully, where scientists are still undecided. To be brief, I have frozen Peaches on a rather large experimental scale, distributed them gratis over an extremely wide radius, and have been closely connected with a freezing plant of commercial capacity which grew out of the first experiment and operated a full season very close to its estimated capacity.

My personal experience with Georgia Peaches began in a Georgia Peach orchard, continued through Peach sales in mid-western markets, and persists in my present capacity as head of the Agricultural and Horticultural promotive development work of the Atlanta, Birmingham and Coast Railroad, traversing the Georgia Peach belt. I was more or less informed of the failures attending efforts to freeze successfully the magnificent but dry California Peach, but it seemed to me that if the Chinese had for hundreds of years frozen naturally for transportation the very juicy and perishable Kaki type of Persimmon, America might some day successfully freeze artificially the very juicy and very perishable Georgia Peach.

Experiments in 1929.

In the summer of 1929, in a very amateurish way, and mostly by rule of thumb, I carried out an experiment, in the course of which 20,000 pounds of ripe Georgia Peaches were frozen. This batch was held in storage for some months and distributed in small lots, being served at Christmas—mid-winter—on the dinner tables of many notable people, in many famous clubs and hotels, and in numerous dining cars and steamships.

A great deal of very favorable publicity was created by this effort. The product was pronounced very fine indeed by many competent judges, and if the outcome were a lucky accident, as may well be admitted, it may also be admitted that many important inventions, discoveries, and processes have come about by accident. Men who never before have eaten a tree-ripened Georgia Peach, ate more than one at their Christmas or New Year dinner table, and enjoyed them hugely. After making all due allowance for that part of the favorable impression due to novelty, it was evident that the consensus of opinion as to quality generally found expression in flattening superlatives.

Freezing Ripe Peaches.

Before the main varieties of the Peach crop of 1930 began to move, there had been built at Montezuma, Ga., a quick-freezing plant designed to handle 40,000 pounds of ripe Peaches in twenty-four hours. The plant was built and owned by Tom Huston, Frozen Foods, Inc., of Columbus, Ga.; designed and constructed by Parklap Engineering Co., of New York and Tampa; and the refrigerating equipment designed and furnished by the Altanta office of the Frick Company. The layout, design, installation and equipment was the result of the experiments of the previous year, and the plant was designed and intended to carry out on a commercial scale what in Georgia and the country generally had come to be known as the "Tucker Process" of quick-freezing tree-ripened Peaches.

This first

commercial quick-freezing plant

for Georgia Peaches operated throughout the season, handling over 1,000,000 pounds of raw material and turning out nearly 700,000 pounds of the finished product. Naturally, there were many delays, re-adjustments, changes, alterations, congestions and other troubles incident to getting a new plant going in an entirely new industry without guidepost or precedent. However, the fact remains that this first plant operated successfully throughout the entire season so long as raw material was available, and turned out a product which has gone into consumption through the regular channels of trade. I think I violate no confidence when I say that the plant earned a profit despite all the difficulties that attend such new and untried ventures.

There seems to be no reason at this time why the Montezuma plant should not continue to operate profitably in future, and on a much larger scale than it now operates, nor any reason why other plants at strategic locations throughout the Georgia Peach belt should not be built and operated with entire success. The trail has been blazed; the way has been opened. We still have problems of distribution, but there is a vast difference between handling an extremely perishable commodity like the Georgia Peach and handling a staple, stable article of merchandise like the frozen Georgia Peach.

(Continued overleaf.)

The Process Described.

BY THE PROCESS OF QUICK-FREEZING, the original flavors of the fruit are retained without the breaking down of the cells. Quick-freezing is also so satisfactorily applied to meats, though with fruits the process is more difficult because of the delicate tissues of the fruit.

The Peaches referred to in Mr. Tucker's paper are ripened on the trees, picked and handled with care, and are frozen promptly. Through being ripened on the tree and frozen quickly, the full flavors are imprisoned.

* * * * *

On arrival at the freezing plant the process is as follows: the skin is removed by a special process, the Peaches are placed on belt conveyors and carried to tables, where girls are ready to cut the fruit in halves, remove the stones. After inspection, the Peaches are sliced by machinery, then conveyed to other tables, where girls are ready to add syrup—in small quantities—after which the fruit is packed in ¼ lb. containers. After sealing the containers pass through freezing tunnels, where the temperature is 35 degrees below zero.

The fruit thus frozen is kept in cold storage until transport is desired. Refrigerated railway trucks are necessary, and again when delivered to hotels, stores, warehouses or restaurants, low temperature is essential.

* * * * *

Up till recently the question of over-production of Peaches has been a serious one, and it had been proposed to cut down a number of the trees. However, the process of quick-freezing has come in a very practical and helpful way, making it possible to supply far distant markets, which were previously inaccessible, and a better day has dawned for Peach growers.

(This series will be continued next month—Oranges, Cherries and Apples.)

The "Off Year."

Interesting Experiments in South Australia.

COMMENTING on the established fact that many fruit trees bear a big crop in one year and a small crop in the next, and that two good years rarely follow one another, Mr. Chas. H. Beaumont (Districts Horticultural Instructor, South Australia), stated that he has noticed that some orchards bear well on the general "off year" and bear only a few fruits on the general "big year"; indeed, individual trees in the orchards also show this peculiarity, so that climatic conditions and insect interference cannot be held to have any special effect; nor can it be attributed to the stocks, because at least 90 per cent. of the stocks used are similar in every respect. Nearly every orchardist has his own special idea on the matter, and many are trying to demonstrate their theories and to overcome the trouble to some extent.

Last year there was a general big crop—bigger than usual—and the reason that it was bigger was probably due to the fact that the trees were weaker owing to the lack of winter rains. Weak trees usually set heavier crops than vigorous trees; they aim to reproduce themselves before passing out, and so set a big crop of what is mostly inferior fruit, inferior in size, inferior in quality and in color; hence, artificially weakening trees are not a good commercial proposition.

Preventing Trees From Bearing.

Last year some of the growers in his district decided to prevent a number of trees from bearing by removing the blossoms. One grower actually cut off the flowers of several fair-sized trees; others spoiled all chance of pollination by burning the flowers with a spray of lime sulphur strong enough for the purpose; others, again, pulled of the fruit when it was big enough to handle easily, and in one neglected orchard all the fruit was knocked off so that the owner might be relieved from the necessity of spraying to control codlin moth. In all these instances a crop has set this year; whilst other trees near by, not so treated, are bare or nearly so. Whether the procedure will alter the habit of the tree permanently remains to be seen.

He has examined trees which had been treated with fertilisers in the hope that a second continuing crop would result, but has not found this satisfactory as a whole, with the exception where the trees so treated were also supplied with water at the critical time.

Usually when trees are bearing a very heavy crop, there is a deficiency of foliage and of a growth of new wood. There was a wonderful show of blossom this year on most of the trees which bore heavily last year, but it was noticeable on close examination that the flowers were not perfectly formed and there was consequently no pollination.

In a number of orchards it is a practice to grow vegetables between the trees on portions selected as suitable; this means the use of fertilisers and also the use of water. The trees in these portions bear a crop of fruit every year. One grower used a patch of ground for some years to raise onion seedlings; there were nine Apple trees in the patch, and they bore continuously. He then began to raise the onion plants elsewhere and did not water the trees and they failed to bear; last year they had a big crop and this year the crop is small.

With Apple trees particularly it is necessary that they should bear the crop and form buds for the coming year, so that growing new wood and a generous foliage is a necessity for the wellbeing of the tree, if it is to mature the buds so formed. The control of the quantity of fruit on the tree and the supply of sufficient moisture seem to be necessary if regular bearing is desired.

Mr. Beaumont has suggested to several growers that they should water some of the trees as soon as the crop is off, and, if the winter rain is late, continue to irrigate them. If heavy rains come later it would do no harm, if the orchard is reasonably drained. It should tend to lengthen the growing period and thus stimulate the trees and help to mature the buds.—("S.A. Journal of Agriculture.")

REFUSES TO PAY TAXES.

Farmer Says He Would Sooner go to Gaol.

A farmer in New South Wales got his assessment papers in connection with the Wages Tax, and has returned the lot with the intimation that if payment is insisted on he will be obliged to go to gaol.

Fruit Markets in the East.

Northern China

No. 4 of Series Continued from March "Fruit World," page 158.

STUDIES IN THE OPPORTUNITIES for the marketing of fruit in Eastern Asia were recently conducted by a delegation from California. The information was published in Bulletin 493 from the University of California. This Bulletin is being summarised by Mr. J. H. Lang, of Harcourt, Vic. This is the fourth article of the series. The other three appeared in the issues of December, 1930, and February and March, 1931.

* * * * *

Fruit Markets in the East.

NORTHERN CHINA INCLUDES the area between Manchuria, on the north, and the Yellow River on the south, and embraces Mongolia and the Gobi Desert.

Tientsin is the chief port of entry, and Peking, the former capital, is a nearby centre of distribution and trade.

Each of these cities has a population of over a million people, and the total population of this territory is about one-third of all China, somewhere between 75,000,000 and 100,000,000. Portions are comparatively well served by railways, but vast areas are many months distant from the seaports.

The rural population cannot be considered as possible consumers of imported fruits. In Peking it is estimated that 7.8 per cent. of the population can be classified as "rich," with a family income of 100 dollars a month or more; 29.5 per cent. have incomes of 50 to 100 dollars a month. Thus only one-third of thes urban population are potential purchasers of canned or dried fruit.

The minimum standard of living possible in Peking is an income of one dollar a month, and there are many persons who go through a lifetime on no larger income.

In Northern China there are many persons of wealth who are able and willing to pay any price for foodstuff that appeals to them. There are certain hams that sell at 200 dollars each. One may in Chinese restaurants pay anything from 15 to 150 dollars for a dish of sharks' fins, according to the variety that is served.

Canned and dried fruits would be consumed by from 10 to 20 per cent. of the population in the cities, provided they were put up in small packages and widely advertised.

Northern China has hot, brief summers and long, cold winters. During the heat and dampness of summer dried fruits do not keep well in paper cartons, and fresh fruits are subject to rapid deterioration.

Fruit has a minor place in the diet of the Chinese people. A Chinese medical superstition teaches that cold foods are dangerous, and should not be eaten at meals; if canned fruits are consumed they are usually heated before being served. The diet is chiefly based on cereals. Vegetables are cheap and abundant. Fruits are comparatively expensive and scarce. Meat is only consumed in small amounts.

Enormous quantities of fresh fruit are on sale, and all the markets of the cities, and at railway stations, fresh fruit sellers meet the trains—Peaches, Pears, Grapes, and Apples being produced locally, as well as Apricots, Cherries, and Plums. Apricots sell at 1-3rd cent in the U.S.A. money, Plums ½ cent, and Watermelons 4 to 16 cents, according to size; Pomegranates 3 cents each, native Apples 6 cents a pound, native Pears 4 cents a pound.

In 1928 Apples to the extent of 741,466 pounds were imported—17,733 pounds from U.S.A., the remainder from adjacent ports.

Oranges and Lemons are also imported, chiefly from southern Chinese ports.

Apples are subject to a duty of 1 dollar per 133 1-3 pounds, and Lemons 3.40 dollars per thousand Lemons: other fresh fruit, 10 per cent.

Canned Fruits.

Although Chinese canned fruits are vastly inferior to the imported product, both in quality of the fruit and the amount of fruit in the can, they are sold extensively.

The Chinese practice is to fill the tins only a third or a fourth with fruit, the remainder of the tin being filled with a thin syrup.

The most popular canned fruits are Apples, Peaches and Cherries; the demand for Grapes, Apricots and Pears is relatively small.

The current prices in September, 1929, for American canned fruits were, in No. 2½ cans:—

	Wholesale. Per case. Dollars.	Retail. Per can. Cents.
Apricots	6.94	26–34
Cherries	9.38	28
Peaches	6.81	22–28
Pears	8.08	26
Fruit salad	9.40	28

The 8-ounce can is having increased sales.

Canned fruits are ordered by dealers in Tientsin at c.i.f. prices through local agents of California packers. There is a duty of 12½ per cent.: also wharfage dues, and a conservancy tax equal to 8 per cent. of the duty. Handling charges average 4 cents a case. A local Customs duty of 5 per cent. on c.i.f. prices is paid for entry into the city of Tientsin.

Dried Fruit.

A large number of native dried fruits are sold in semi-candied form: Persimmons, 20 cents, Oranges 17 cents, Figs 20 cents, Apricots 17 cents, Peaches 17 cents, black Dates 12 cents, Raisins 12 to 18 cents a pound.

Among imported fruit Raisins hold first place, and sell at 17 cents a pound. The 1⅝ ounce carton retails at 3½ to 4 cents.

In China the first determinate factor in any sale is the price. There is an attraction to the Chinese in foreign goods. This can be successfully capitalised by trade promotion methods, provided the price can be kept within the reach of the consumer of the middle classes.

Central China has an estimated population of 200,000,000. Portions of this territory are the most thickly settled in the world. Others are so sparsely populated as to be among the little known region of the globe. There are eleven cities with over 100,000 population. Its great port of entry is Shanghai.

On the Yangtse River steamers journey 1,800 miles into Western China.

Shanghai, with a population of 2,760,000 people, ranks with London and New York as a shipping port. About 40 per cent. of the trade of China and 58 per cent. of its imports comes through this city. There are 47,700 foreigners in the city.

Conditions as to living and consuming power are somewhat similar to those of Northern China, though in large centres wages are higher, but the addition of meat, vegetables and fruit to the diet are considered as luxuries and not within the reach of every working man.

China Now Grows Much Fruit.

The competition from fresh fruit produced in China is on the increase. No detailed survey of the fresh fruit production of China has been made, but, judging by the fragmentary reports available, it is larger than is generally supposed.

The Fukein province produces: —

30,000,000 pounds of Foochow Oranges.
2,500,000 pounds of Plums.
800,000 pounds of Peaches.
130,000 pounds of Prunes and Loquats.

In Chekiang province 40,000,000 pounds of Oranges are produced.

In late April and early May Apricots are on sale. Peaches follow in May or June. The least amount of local fruit is on the market during the very hot summer months.

In August fruit from Chefoo arrives at Shanghai and affects prices.

The wholesale price of Chinese fresh fruit is from 2 to 4 cents a pound. Apples, Oranges, and Lemons are imported chiefly from other Chinese ports.

Canned Fruits.

Chinese canned fruits are abundant: there are twenty-one canneries in Shanghai. Their total output is valued at 4,000,000 dollars a year.

In 1928 canned fruit was imported into Shanghai as follows:—

U.S.A.	134,161 dollars
Singapore	16,541 ,,
Great Britain	3,208 ,,

Small amounts from other countries brought the total value to 167,842 dollars, U.S. currency.

Dried Fruits.

Californian Raisins, due to their extensive distributing system and trade promotion, are found almost everywhere. Prunes are practically the only other dried fruit on sale in the interior.

In 1927 the importation of Raisins and Currants were:

	Pounds.	Value. Dollars.
U.S.A.	3,236,800	249,240
Hongkong	113,333	15,770
Singapore	38,133	8,199
Australia and New Zealand	69,200	7,961

The total imports were 3,476,730 pounds, of which nearly a million pounds were re-exported to other Chinese ports.

Trade promotion must take the form of an educational campaign to acquaint the people with the product. Free samples have been the basis of much trade. Illustration used in advertising must be simple and perhaps humorous to appeal to these fun-loving people.

* * *

Next Article:—"Southern China and the Philippine Islands."

Messrs. F. Cave & Co. Pty. Ltd., No. 9 New Wholesale Fruit Market, Melbourne, are wholesale fruit merchants and general commission agents. They are also suppliers of all orchardist requisites. Correspondence is invited by this firm.

South Australia.

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

The monthly meeting of the Executive Committee of the South Australian Fruit Marketing Association was held on February 27, 1931.

Mr. H. J. Bishop (Chairman) presided, and there was a good attendance of delegates.

Freight for Hamburg.

The Chairman submitted an exhaustive report in regard to the very unsatisfactory position respecting freight for the present season, particularly freight for Hamburg.

Last season approximately 52 per cent. of the total export went to Hamburg, and notwithstanding this, no direct freight to Hamburg has been allocated for the present season. This has resulted in a serious loss of business to both shippers and growers members, and the fact that South Australian fruit will be entirely off the Hamburg market for one year may prove detrimental to future business.

It was unanimously resolved to make a very strong protest to the Australian Overseas Transport Association, and the Export Overseas Transport Committee.

Australian Apple and Pear Export Council.

It was unanimously resolved that the Association should affiliate with the Australian Association, and become foundation members.

Freight on Pears.

It was resolved to approach the shipping companies, asking that freight on half cases of Pears should be reduced from 2/3 to 2/-. At the present time freight on Apples is 3/6 per case, while two half cases of Pears strapped together, and measuring practically the same, cost 4/6.

Research Committee.

Interest was expressed in the formation of a Research Committee consisting of the grower members of the Victorian Fruit Marketing Association. It was resolved to obtain information in regard to this Committee with a view of making it an interstate body as the subjects to be dealt with are of particular interest to South Australian growers, particularly that of biennial cropping.

Verdun (20/3/31.

Our district has a light crop of Apples this season, and owing to the depression we are not receiving the usual high prices to help out our misfortune: however, let's hope.

Pears and Plums have given a fair crop, although the latter had to be sold cheap owing to factories not buying.

Some export has been done at good prices for Apples owing to the exchange being in our favor.

A fair amount will be kept for cold storage.

The Codlin Moth Menace.

I always feel that something definite should be done about the small fruit gardens around us which breed codlin moth for us to buy lead to kill, as it always takes more spray near these.—A. W. Mack.

Sandy Couldn't Hear.

"Hello! Hello! Is that you, Sandy?"

"Aye."

"Is that Sandy, Sandy McTavish I'm talking to?"

"Aye; speakin'."

"Well, Sandy, it's like this; I want to borrow five pounds."

"All right. I'll tell him as soon as he comes in."

. . . The Open Forum . . .

Fruitgrowers and others connected with the industry are invited to contribute their views to the "Fruit World" through the Open Forum.

This paper does not necessarily identify itself with the views here expressed, and reserves the right to reject or curtail, if necessary, any articles submitted. These should be on seasonable or topical subjects.

PRICE OF SUGAR.

Reduction Needed for Fruit Industry.

Manufacturers and Fruitgrowers Should Confer.

The Editor, "Fruit World."

Sir,—Under the terms of the sugar agreement, which fortunately shortly expires, the great mass of consumers have been heavily taxed in order to maintain a wealthy monopoly. Factories have been compelled to curtail their operations, thus depriving thousands of men, women and girls of employment. The effects upon a large section of the fruit industry have been disastrous, immense quantities of fruit being wasted annually, or sold at prices which scarcely pay the cost of harvesting.

Whilst a substantial reduction in the price of sugar for all purposes should and can be made, without serious injury to the Queensland sugar interests, it is necessary that the secondary industries, using sugar as raw material, should be encouraged by greater concessions, or rebates, than those allowed under the present agreement.

It is, however, only fair that the growers should share directly in the benefit of these concessions. Their interests generally have been ignored in the past, but this is to a large extent due to the want of unity and apathy that prevails amongst so many. Their political power, which by united action might be used to protect their interests, lies dormant.

In this respect, they could learn a lesson from the wine Grape growers, who by means of organisation have secured full benefit from the Wine Bounty Act, a clause of which provides that the bounty on exported wines and spirits is only granted to makers, who pay the official prices for Grapes, which are fixed by the Minister of Customs on the advice of the Chief Excise Officer. These prices on the average have been more than double those prevailing before the Vinegrowers' Association was formed.

As regards the disposal of fruit for jam or canning, the present system is very unsatisfactory, and could be improved by means of collective buying or selling, or, better still, by controlled prices, as in the case of sugar, wine Grapes, etc.

To stabilise prices and improve the position generally, I suggest the following scheme.

1. A conference consisting of an equal number of delegates representing manufacturers and growers from each State, or convened by a representative of the Federal Government, to be held annually in November, for the purpose of arranging factory prices, and other matters in connection with the jam and canning industry.
2. Prices as agreed upon to be proclaimed by the Minister for Markets, and made uniform throughout the Commonwealth, subject to conditions or necessary variations.
3. The Minister to arbitrate, in case the parties concerned fail to reach an agreement.
4. Any manufacturer who fails to abide by the said agreement to be debarred from any concessions in the price of sugar, and to be charged trade price for same.

At the conference, problems concerning the export and local distribution of canned fruit, etc., could be dealt with. including the dumping at cut prices of canned fruit in the interstate trade, which is having a detrimental effect upon this section of the fruit industry.

I am, Sir, yours, etc., A. B. ROBIN.
Nuriootpa, S. Aust., March 18, 1931.

BLACK SPOT CONTROL.

Autumn Spraying Not Necessary.

BLACK SPOT CONTROL is a subject of great interest to all fruitgrowers, and any practical hints of service are eagerly absorbed. A reader sends in the following letter:—

"According to your 'Annual,' recently to hand, the treatment for black spot is set down for the spring. It occurs to me, however, that probably the better method of control would be to spray in the autumn after the fruit has been removed and before the leaves fall. The idea being to treat the tree and leaves before the winter, and thus as it were, to remove the cause and thus act as a preventive."

* * *

The point raised by this reader is raised from time to time by those who are seeking the best method of black spot control. Several leading horticultural scientists have been consulted, and they are unanimous in their opinion that no useful purpose would be served by spraying the trees and leaves with a fungicide during the autumn in an attempt thus to control black spot.

Leaves now affected with black spot have the fungus in the tissues, which cannot be reached by a spray. In the spring, these infected leaves, which are then in the soil develop tiny black fruiting bodies, which, on maturing, are capable under wet conditions of ejecting spores into the air where they are carried by the wind to the leaves and fruit. Successful control depends entirely on the application of the fungicide just before the ejection of the spores. The time of ejection of the spores varies with the season and the locality.

It will have been noticed from reports in the "Fruit World" that an idea was mooted for the growers in specific districts to employ scientists who would observe the leaves and having found just when the black spot spores had been released, this information should be broadcast by wireless, thus growers would be ready to put on their fungicidal sprays or dust.

In Canada and U.S.A. fruitgrowers have this plan actually operating, and their trained observers are thus able to predict when the spores are ready for ejection, thus giving growers the opportunity of applying the spray or dust at the correct time.

This plan is a commercial success. There is no "hit or miss" about the spraying time. Growers do not waste money in spraying if they know that when spraying (or dusting) their work is effective.

* * *

The suggestion that growers might employ a trained scientists to observe and report on the release of black spot spores, and the necessary control measures, is one well worth following up. The cost involved would be more than made up in the saving of expense and the securing of higher quality fruit.

* * *

In America and Canada success has been attended with the using of fungicidal dusts, these dusts being capable of rapid application. These dusts, however, need to be applied on calm days, hence the work is often done in the early morning or in the evening.

Correspondence on this subject is invited.

Non-setting of Almonds.

A grower at Smoky Bay has several Almond trees, and the blossoms fall off instead of setting fruit.

Reply.—There are several causes, either of which may account for this defect. (1) If the Almond trees bloom in the frosty or cold and wet period of the year in this State—usually at the end of July and early August—the climatic effects may clog the pollen or damage the flowers, as well as inhibit the activities of pollen carrying insects. The Brandis variety is seriously influenced in these directions. (2) If only one variety is grown, the blossoms may be self sterile, or if more sorts are grown but only one sort blooms at a time, the same effect operates. (3) The planting of sorts known to bloom simultaneously is a safeguard, and more particularly if they be from mid-season to late in their periods of blossoming. Amongst soft-shelled kinds the following are recommended for inter-pollination:—Ne Plus Ultra for I.X.L.; Ne Plus Ultra for Harriott's Seedling; I.X.L., Hatch's Nonpariel, and Jordan for Ne Plus Ultra.

(Answers by G. Quinn, Chief Horticultural Instructor, in "S.A. Journal of Agriculture.")

"SUMMER OIL" SPRAYS.

American and Australian Experiences Compared.

IN the "American Fruitgrower," December, 1930, issue, there is a significant paragraph in an article dealing with "Summer Oil Sprays."

After summarising briefly the good results which had been obtained from these in earlier years, it goes on to say:

"The results of such use in 1930 have not proved equally favorable. Summer oils which previously had proved themselves to possess the highest degree of safety and which had shown only the very slightest insignificant evidence of any injurious effects on foliage or fruit, have produced some burning of foliage during the year just passed. This burning effect has varied from only slight injury to a rather noticeable burning of the foliage.

Likewise, some objectionable results on the fruit in the form of spotting, surface dullness and poor coloring, have been observed in some cases."

Australian growers would not like to judge such evidence as this hastily, yet they can see the necessity for the utmost caution and of very careful observation when these oils are used. The reason of the injuries to fruit and foliage in the 1930 summer is rightly attributed to "extreme climatic conditions, unprecedented heat and drought," but in judging American results we must always remember that their Apple districts are much cooler than ours, and that the heat of which they complain as abnormal, may be with us an average summer experience.

Long since experiments were carried out in Victoria in the use of summer oils and warnings against the dangers of dry hot weather were given. There are some queer contradictions in oil spraying, thus whilst almost 100 per cent. oil may be used on many deciduous trees in their dormant condition, even a 2 per cent. solution may be injurious to evergreens when in the same condition.

Again, whilst strong solutions, even 5 per cent., will not injure the tenderest young shoot of an Orange or Lemon, a 1 per cent. will destroy the young shoots of a Peach.

It was found that throughout November and December in Southern Victoria, oils could be used with success and safety; even the heavy bodied oils, such as are used for winter spraying could be used on Apple trees as in a 2 per cent. solution they gave wonderful results in the control of woolly aphis and red spider, in fact, some of the best orchardists to-day regard a 1 per cent. solution made soapy or used with a spreader such as "Caseinate" (this contains no lime) as the most effective spray for Peach aphis, woolly aphis, red spider, etc., throughout the spring.

With the coming of summer, however, the story changes; no experienced oil sprayer will give us any certainty: you may and you may not have injury, is all that he can say, and this, even with the use of the very lightest oils. One spraying may give such good results that the story of it goes far and wide, but alongside of this may be another which has been too near an outburst of heat and drying conditions, and then the effects may be pitable. The mildest injury is revealed in a drooping of the foliage and a dulness in the bloom of the fruit; the severest may cause almost complete defoliation and loss of fruit.

A storage experiment last season showed that even in the mildest form of injury the keeping qualities of the fruit are lessened; altogether it would seem that we have yet much to learn before summer oils will take their place as one of the standard sprays for use on deciduous fruit trees.

RUST OF STONE FRUIT TREES.

IN THE MURRUMBIDGEE Irrigation Areas this season, several varieties of Peaches have been severely affected by rust. In addition to lessening this season's crop the following season's yield may also be reduced through the destruction of the leaves. The flower buds which will produce next season's crop are now developing, and unless there is sufficient foliage to provide the elaborated plant sap to insure the buds being properly matured, the resulting crop must be light.

The treatment of the disease is one of prevention, not of cure, and growers are therefore recommended to take full precautions to reduce the next season's infection to a minimum.

The trees may be sprayed in the autumn just as the leaves are yellowing, with Bordeaux Mixture made on the 6-4-50 formula (6 lbs. bluestone, 4 lbs. lime and 50 gallons water). As far as possible collect and burn diseased leaves. This is at least practicable with young trees. In any case endeavor to bury the diseased leaves as early as possible by deep ploughing, and keep them buried by ploughing or cultivating at shallower depths. Remove all diseased wood, and burn the prunings. Spray with Bordeaux mixture (6-4-22) before the buds burst. When severe defoliation has occurred it is advisable that every effort be made by good cultivation and the application of fertilisers, to invigorate the trees the following season.

Leaflets on the disease may be obtained from the N.S.W. Department of Agriculture, Sydney, or from the local officers of the Fruit Branch.

AUSTRALIAN FRUIT EXPORT.

The total quantity of fruit exported from Australia up to the week ended March 14 was as follows:—

Apples	548,929 cases
Pears	116,569 cases

Details of the quantities from the individual States are:—

New South Wales	Apples	15,675
	Pears	5
Victoria	Apples	123,963
	Pears	79,856
Queensland	Apples	1,536
	Pears	40
South Australia	Apples	6,330
	Pears	3,860
West Australia	Apples	45,295
	Pears	3,136
Tasmania	Apples	356,130
	Pears	29,672

EXPORT OF PEARS.

The General Manager of the South Australian Government Produce Department (Mr. G. A. W. Pope) stated that he had received a cablegram from the office of the Trade Commissioner, dated March 24, to the effect that the shipment of Pears made by this Department in the R.M.S. "Naldera" to London on February 12, 1931, has arrived in a satisfactory condition.

Shipping Pears from Victoria.

Illustration by Courtesy Journal of Agriculture, Vic.

The Department shipped Duchess Pears in crates and half-cases, and the cable advised that the Pears were realising the following prices:—Crates, 12/- to 14/-; half-cases, 5/- to 7/-.

It also stated that other Australian Pears by this boat were selling at from 8/6 to 12/- per bushel case.

APPLES IN BASKETS.

New American Container Popular.

The use of baskets for exporting Apples from America to the United Kingdom and the Continent has come largely into favor. Each basket contains a bushel.

SOMERVILLE.

THE PENINSULA CO-OPERATIVE Fruit Co. Ltd., whose packing shed and stores are situated at the Somerville railway station, have been busy this month packing for export. They expect to ship in the vicinity of 20,000 cases of Apples and Pears this season—this is about the same quantity as they sent last year.

The season is three weeks earlier than usual, and the fruit has been found to be maturing quickly. All fruit is marketed under two grades: "Standard" in the Canadian case, and "Plain" in dump bushel cases.

An attractive colored label, under the name of "Sunfed" is placed on the ends of cases. Nine girl packers are employed, and the work is put through quickly and efficiently. Fruit is graded on a "Lightning" fruit grader with accommodation for ten packers. When packed, the cases are placed on roller conveyors which carry the case to the nailing-down press.

To cope with the increased volume of business, the shed has been enlarged, it is now three times its original area. The company claim that their case-maker, Mr. P. Clarke, is one of the fastest in Australia, he averages 400 to 500 cases per day.

The present directors of the company are Messrs. H. Barber (chairman), G. J. Brunning, J. Unthank, J. D. Carpenter, G. Sprague, A. E. Dennett and K. H. Webb. The general manager is Mr. T. E. Butler, who is ably assisted by Messrs. C. P. Hall and A. J. Shout.

CANNED PINEAPPLES.

Mr. Ranger to Visit Canada and England.

Mr. W. Ranger, Manager of the Committee of Direction of Fruit Marketing, Brisbane, is shortly leaving for Canada and the United Kingdom to organise the sale of canned Pineapples. At the present time there is a fair surplus of canned Pineapples still on hand: it is hoped that, through Mr. Ranger's services, this surplus will be satisfactorily disposed of to clear the way for succeeding packs.

Valuable Research Work in Victoria.

Good Service is Being Rendered by the Staff of the Plant Research Laboratory, Burnley.

THE FRUIT INDUSTRY has received considerable benefit from the efforts of the staff of the Plant Research Laboratory at Burnley.

The staff of the Laboratory, located at the School of Primary Agriculture and Horticulture, Burnley Gardens, Melbourne, undertakes, under the direction of the Agricultural Superintendent (Mr. H. A. Mullett), the departmental investigational work into the nature and control of diseases of all crops, both agricultural and horticultural. Naturally a considerable amount of attention is devoted to horticultural problems, the chief of which are outlined below.

The staff of the laboratory, though small, is keen, and is continually seeking, through the giving of sound advice, to gain the confidence and sympathy of the practising horticulturist. At present, the staff consists of Mr. C. French, formerly Government Entomologist, but now Biologist and officer in charge of the branch. He is aided in entomological investigations by his assistant, Mr. R. T. M. Pescott, M.Agr., Sc., whilst Mr. K. M. Ward, B.Agr., Sc., is also a member of the entomological staff. Plant diseases are the concern of Mr. D. B. Adam, B.Agr.Sc., Vegetable Pathologist, and Mr. S. Fish, M.Agr.Sc., Assistant Plant Pathologist. Problems in cool storage are dealt with by **Mr. G. B. Tindale, B.Agr.Sc.**

In this short review of the work of the staff, only brief reference can be made to the investigational work already undertaken, and at present under consideration at the Plant Research Laboratory.

Codlin Moth Investigations.—The problems raised by arsenical spray residues and the introduction of white oil emulsions to combat this major pest of Apples and Pears created a demand for advice of the new practices. Experiments were initiated at Harcourt some four years ago, and have established the general fact that in certain cases the use of white oils in the spraying programme gives satisfactory results. A summary of three years' results at Harcourt shows the following:—

Arsenate of lead sprays alone—30 per cent. codlin infected fruit.

Arsenate of lead calyx sprays, followed by white oil sprays—9 per cent. codlin infected fruit.

Under these conditions it has been shown that the use of white oil is justified and is economically sound. In cases where the codlin infection is normally small it may not be a payable proposition to use white oils.

However, even more important results are likely to emerge from a study of the life history habits of the codlin moth under Harcourt conditions. It is hoped that in the near future the supply of information of daily temperature conditions will place officers in the position of being able to indicate precisely when to expect moth emergence, and hence when sprays should be applied. By this means, not only will sprays be timed more accurately, but certain summer sprays at present applied may be found to be unnecessary.

Cockchafer Grubs in Strawberries.—The injection of certain chemical substances, notably carbon bisulphide and paradichlorbenzene, into the soil at intervals along the rows of Strawberries has been found to be very successful in keeping down the attacks of cockchafer grubs. The cost per acre is a small one, and is justified in the case of such a highly valued crop as Strawberries.

Green Peach Aphis.—The green Peach aphis, assuming as it does epidemic numbers in some seasons, is receiving attention by way of a more accurate determination of its complete life history, whist the use of dormant winter sprays to kill the eggs of this aphis is also being investigated.

Black Spot of Apples and Pears.—This is a disease of ever-recurring concern to growers and orchard supervisors in the different districts are carrying out trials on the best spray schedules for particular districts. Serving as a basis for these trials are some investigations at the Plant Research Laboratory, which aim at finding the time and conditions under which the overwintering spores are shot out from old fallen leaves. It is indeed merely a coincidence that the first discharge of these fungus spores occurs about the time that the blossoms are showing pink. Sometimes the spores may be ejected earlier than the pink stage, with the result that spraying gives satisfactory results. Sometimes they may not be present till the petals are full out and falling, with a result that the first spray is wasted. Trials are also being undertaken to see by how much infection is reduced if the old fallen leaves are raked up and buried or are sprayed as they lie on the ground.

Polystictus canker is a disease associated with grafting. Investigations are being carried out to test the theory that infection takes place at grafting time and before the large cut end of the tree stock heals. It is hoped that a new wound dressing that is being used will not only help in avoiding the losses at present sustained in some districts, but will be found to be quicker, easier and more satisfactory to use than present methods.

Raspberry White Root.—Some two years ago a plot of Raspberries was established for the study of this disease. Investigation is proceeding along three lines: varietal trials to discover possible resistance, manurial trials, including heavy lime applications to discover whether, by making soil conditions more satisfactory disease resistance can be built up, and thirdly treatment with soil disinfecting chemicals, such as iron sulphate. This last work has not yet been started.

Apricot Scab or Shot-hole Investigations.—This is a widespread disease in Victoria. It affects twigs, leaves and fruits, the latter so severely that it is unfit for marketing either as canned or fresh fruit. This became so general in the Goulburn Valley fruit area that growers, while able to grow sufficient numbers of Apricots for profitable crops, could not in many cases, grow sufficient of them free of disease to make the industry profitable. Work was continued for three years during which time laboratory and field experiments for the control of this disease were conducted. The experiment consisted of spraying the trees with various sprays. Results were obtained by counting the sound and diseased fruits produced on the tree in the different spray tests. The experiment was so designed that reliance could be attached to small differences in the percentage of diseased fruits, The control of disease attained improved from year to year so that at the end of the third year Bordeaux mixture, 6-4-40 plus 1 lb. of lime casein spreader per 100 gallons of spray applied in the autumn and early in spring at the pink bud stage reduced the percentage of the disease by 75 per cent., i.e., 77 per cent. of the fruit produced on unsprayed trees was diseased, and only 2 per cent. of that produced on the sprayed trees was diseased.

The problem of controlling Apricot scab from the practical standpoint has been solved, and the control measures worked out as a result of this work are now very widely adopted. A detailed report on this work was published in the "Fruit World" of May, 1929.

Transit Rot.—This disease first drew attention on account of its prevalence in Peaches being sent to Melbourne for canning purposes. Some exceptionally heavy losses occurred in individual consignments. Investigation indicated that the main source of infection was the second-hand cases and where these were sterilised, losses were minimised. Sanitation and the removal and destruction of old fruit is indeed an important step in controlling this disease.

A further investigation on the problem of brown rot and transit rot development in Peaches during transport from the Goulburn Valley to Sydney, was undertaken by this laboratory. Careful investigations on the effect of temperature showed that the rate of development of our local brown rot and transit rot fungi was retarded by low temperatures. This led to the suggestion that refrigeration should be applied to long distance consignments during warm weather. The results have been most satisfactory, and have led to the adoption of the practice on a large scale of the practice of pre-cooling and ice-trucking. Last season 70,000 cases, approximately, were pre-cooled in the Goulburn Valley and sent to Sydney in iced trucks. The full details of this investigation was published in the "Fruit World" of February, 1930.

Apple Storage Problems.—Breakdown, scald, soft scald, Jonathan spot, bitter pit, etc., are responsible for considerable losses each year, and investigation regarding these diseases are under way. It has been found necessary to study the conditions under which the fruit is grown, as well as storage conditions. Generally speaking, pre-storing factors largely determine the susceptibility of Apples to these diseases in store.

Peach, Pear and Plum Storage Problems.—There are numerous problems associated with the storage of these fruits. All three are apt to lose flavor and become mealy after a comparatively short storage life, while in addition, Pears are subject to core breakdown and scald. Peaches are subject to browning around the stone and a splitting of the skin, while Plums are subject to skin splitting. It has been shown by storing these fruits over a range of accurately controlled temperatures, that there is a strong correlation between the onset of these disorders and the degree of temperature at which the fruit is stored.

The Storage of Citrus.—This is limited by the onset of moulds, or skin browning. An investigation of the effect of temperature on these moulds indicates a possibility of control by the application of relatively high temperatures for a few days.

In addition, advantage is being taken of the apparatus for the automatic control of any range of temperatures to study the effect of temperature on the life histories of various orchard pests.

LONDON'S APPETITE.

Figures, and oddly enough they are "provisional" figures, for 1930, which tell a wonderful story of London's appetite, are to hand from the Port of London Authority. London's weekly bread consumption, for instance approaches 25,000,000 half-quartern loaves. If they were all of the "sandwich loaf" variety, the daily ration placed end on end would stretch for 600 miles. In addition to home supplies, London imported 1,400,326 tons of wheat and 218,000 tons of flour in 1930. Cheese imports to suit all palates, from cheddar to gorgonzola, totalled 120,000 tons.

To augment breakfast supplies, nearly 145,000 tons of bacon and hams and 73,000 tons of eggs were imported, and London required over 160,000 tons of butter in excess of that received from English farms.

For lunches and dinners, London purchases 660,000 tons of chilled and frozen meat from Australia, New Zealand and South America, and dried fruit, chiefly in the form of Sultanas, Currants, and Raisins for puddings and cakes totalled 111,000 tons.

London heartily supported the "Eat More Fruit" campaign, and received from overseas 621,000 tons of green fruit and vegetables. Even then its demands were not entirely satisfied, for canned goods, much of which was fruit, accounted for a further 111,000 tons.

Our great-grandmothers told us how to make tea. "One teaspoonful for each person" they said, "and one for the pot." in 1930 London imported over 491,000,000 lbs. of tea, equivalent to 94,320,000,000 cups with a goodly allowance for the pots. London, too, has a very sweet tooth, and some 874,000 tons of sugar were necessary to satisfy its cravings.

With all these purchases, amounting to nearly 5,000,000 tons, London's housekeeping purse still had a heavy call upon it for innumerable foodstuffs such as coffee, cocoa, rice, sago, honey, etc.

Overseas growers have much to be thankful for to the London market. Its port serves nearly one-third of the overseas' requirements of the population of England: and London pays up well—it does not ask for extended credit.

January 28, 1931.

NEW ZEALAND HORTICULTURAL TRADES' ASSOCIATION 24th ANNUAL CONFERENCE.

Report by Secretary.

The Executive's report for the year 1930, was read by the Dominion Secretary, Mr. G. A. Green. The demand for fruit trees had increased.

Citrus fruit trees had been grown in increasing numbers. Demand still ahead of supply, hence heavy importations. The N.Z. nurseries were fast working up their stocks: 600 pedigree trees available for test areas for 1931 season.

The Florists' Exchange Branch of the Association was extending its usefulness: it now embraced nearly all the leading florists in the Dominion.

Bud Selection.—Certified buds from Lemon, Orange and Apricot trees had been supplied to nurseries in various parts of the Dominion. More intensive work was needed and activity by all interested.

Tung Oil.—Many enquiries had been made regarding this tree, Aleurites Fordii. Experiments were being conducted.

Queensland.

Deciduous Season Finishing ∴ Citrus Crops Heavy ∴ Brown Spot Troublesome Banana Matters Discussed.

THE DECIDUOUS FRUIT season is approaching completion, with the exception of a few late varieties, which are now almost mature. The quality on the whole has been good, and freedom from disease general.

Fairly heavy supplies of Grapes are still coming forward, and find a ready market, but in common with most other fruits prices have been rather low—from 19/- per hundred-weight upwards.

Citrus Crop Heavy.

Citrus fruits in the principal exporting centres (Burrum and Howard) are well forward. The crop is reported to be heavy, and the fruit of good size and quality.

Brown spot of Emperor Mandarins is spreading through the district, and becoming a serious menace to this variety. This disease was first brought to notice in 1928, when it appeared to be confined to two orchards. From the information available it appears that the disease was originally brought into the State with southern nursery stock. During the interim it has been noted in many orchards, where further introduced plants from the same source have been included. Attempted control by Bordeaux mixture has not been satisfactory, but resulted in increased scale infestation.

The Banana Situation.

In common with other fruit producers, Banana growers are feeling the results of existing depression by a marked falling off in returns, where plantations are well situated and receive adequate attention, investments yield a reasonable rate of interest, and it is thought that the reduction in prices will ultimately be beneficial by forcing many poor areas, which should never have been planted, out of cultivation.

Following upon persistent agitation, the Banana growers have been granted a "Board" under the Banana Industry Protection Act, which, subject to the approval of the Minister, controls practically all matters appertaining to the industry.

The Banana growers as a body were insistent in their demand for

an experimental station

being established in Southern Queensland on a fifty-fifty basis, but as a result of some trivial misunderstanding after it had been established for some years, they were equally insistent that it be closed, which was given effect to and the place subsequently sold.

The bunchy-top scourge is being well controlled, and its complete eradication can now be contemplated, but the beetle borer is still with us, as is also a deleterious fungi generally referred to as leaf spot.

A decided boom in Banana lands has been experienced during the last two years, and several companies projected or entered upon for production under various terms. The most attractive prospectus has been put up in respect of a northern proposition, wherein the returns anticipated are in the vicinity of 50 per cent. on capital invested. In this State we have been subjected to some tall figures in respect of mining ventures, but the proposition under review puts these well in the shade. So far no casualties have been reported in the rush to purchase bonds in this wonderful enterprise, which has received rather more than a fair share of publicity.

Export to the East—Pollination—Duty on Spraying Oils.

INTERESTING NOTES are to hand from a correspondent—("Crofton")—at Thulimbah, S. Queensland, who writes under date March 4, as follows:—

The Stanthorpe show is now over, but I am sorry to say same was marred with rain, although the show went off very well. The fruit this season was very good, although the season has been a dry one. There were a good few entries in for the export varieties, and without doubt they were well up to the mark. The varieties which won were Jonathan, Granny Smith and Delicious.

The Granite Belt is forwarding 2,000 bushels of Granny Smith to the East, also Grapes, Peaches, Plums and Pears. This is the first shipment to go forward this year, but I understand they are sending another consignment to the East on March 12. The Grape-growers of the granite belt have a very good crop this year, and with the season on the dry side they will not have much trouble in marketing the fruit as there will be very little clipping.

Orchard work for March in the Stanthorpe district includes ploughing and planting with barley, wheat, field peas, etc., so as to ensure growth before the frost comes. When turned under in the spring this green manure is very helpful to the trees.

Re pollination, I think that cutting a tree down here and there between the rows that want pollination is the best, or else cut out a couple of leaders in a few trees. I have done this myself with Black Diamonds and Angelina Burdette Plums, and it is acting satisfactorily. I should say that Jonathan and Rokewood or Trevits should be planted if Jonathan are shy bearers.

Spraying Oils.

The Federal Government should leave all oils, etc., which we use in connection with orchard work free from this extra tax, it has put red oils up another 1/- per gallon. I certainly think every fruitgrower should get busy and make vigorous protests in order to get relief.

Do not run any Financial Risk with your Fruit but Consign it to

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Telegraphic Address:
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(Hedley Geeves, Managing Director)

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FRUIT EXCHANGE——BRISBANE

SELECTED AGENTS FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

Improving Fruit Crops.

Manuring to Control Crops—Change of Wood Buds Into Fruit Buds

AT A RECENT MEETING of the South Australian Advisory Board of Agriculture, Mr. Geo. Quinn, Chief Horticultural Instructor, submitted the following report on a resolution of the last Conference of Hills Branches that steps be taken to investigate the possibility of

controlling fruit crops

by systematic manuring:—From what I can recall of the discussion, this resolution and the subject dealing with the change of wood buds into fruit buds are relevant to each other, both having for their object the regulating of the cropping habits of Apple trees. I understand Mr. Wicks, of Balhannah, and Mr. Basey, of Cherry Gardens, have been manuring small plots of Apple trees for the last year or so with sulphate of ammonia with this object in view. We have also added this treatment to a plot of Apple trees devoted to pruning and thinning trials at Blackwood Orchard, and which have crop regulation as their objective.

The unknown factors, however, seem to be what is the best fertiliser to use, and when, and how should it be applied to the land.

Assuming nitrogen to be the crop-limiting factor with Apple trees—as we believe it to be with Orange trees—we are in doubt as to when it should be applied to most effectively meet the needs of the developing flower buds. In the plots or rows consisting of equal numbers of Apple, Pear, and Peach trees growing in the permanent manure trials at Blackwood Experiment Orchard since 1908, the results from annual spring dressings of fertilisers, whether applied singly or in combinations, have thrown very little, if any, light on this subject up to date. Possibly, our dressings have not been sufficiently heavy or have not been applied in the best manner or at the most desirable time to assure the roots receiving benefit therefrom.

Anyway, up to the present we must confess to appearing to be "groping in the dark" in respect to manuring deciduous fruit trees when working along ordinary prescribed channels of procedure.

Change of Wood Buds Into Fruit Buds.

Mr. Quinn submitted the following report on this matter, which was the subject of a resolution passed at the Hills Conference:—The matter of the determination of the period of the year when the flower buds on fruit trees begin to differentiate from the ordinary leaf buds has been under scientific investigation in U.S.A. and Europe from time to time during the past 30 years. Those directed towards the Apple in U.S.A. have been carried out at the respective University Experiment Stations as follows:—By Professor Goff, of Wisconsin, in 1899, on a variety called Hoadley; by Drinkard, of Virginia, in 1909, on Duchess of Oldenburg Apple; by Bradford, of Oregon, on Yellow Newtown in 1912; and by Tufts and Morrow, of California, on the Gravenstein Apple in 1923. More latterly, Dr. Swarbrick, of the Long Ashton Horticultural Research Station, Bristol, England, conducted further research into this subject.

In all of these researches the histological structures of the buds were carefully studied, and micro-photographs prepared showing in clear detail the various stages of differentiation and development of the primordia of the floral organs. Summed up, differentiation was first noticed in the flower buds of the respective Apples by the above-named investigators on the following dates:—By Goff, June 30, 1899; Drinkard, June 30, 1909; Bradford, early July, 1912; Tufts and Morrow, June 11, 1923; Swarbrick, late June, 1927.

Although, as far as I can ascertain, no work has been done in Australia on this phase of Apple bud growth, these periods indicate that we may expect differentiation of the flower buds to be detectable in Australia towards the end of December or early in January. As, however, our climate, and the varieties of Apples we grow, may each exercise some influence on these developments, considerable variations in the equivalents of the American or European dates may be eventually found.

A study of this nature involves not only a good working knowledge of the morphology of the Apple blossoms, but necessitates the possession of great skill in the technique of cutting, staining, and generally preparing vegetable tissues for microscopic specimens to enable critical examinations to be conducted.

In view of these facts, this is work for a botanist trained in vegetable histology and microscopic technique. If the Director of the Waite Agricultural Research Institute could allocate the study to a trained assistant, I could arrange to collaborate by the provision of seasonal material from the Blackwood Experimental Orchard, where trees of a very wide range of varieties of Apples or other fruits are available. It would seem that a more exact knowledge of the times of the year when the various stages of development take place in flower buds in Apples may prove very valuable in formulating any experimental work, aiming at the control of the irregular cropping habits exhibited by Apple and other fruiting trees.

Dr. Richardson promised to collaborate with the Department of Agriculture in conducting experiments as proposed. He suggested that Mr. Quinn's staff gather specimens of twigs and retain them in a fixing bath at the Blackwood Experimental Orchard until the investigations could be commenced.—"S.A. Journal of Agriculture."

Strawberries.

Keep the hoe going among the Strawberry plants, cutting off all new runners, unless wanted for planting a new patch later on. It is a good plan to have a young patch coming on, as Strawberries only last three or four years, after which their cropping power decreases; although in favored districts they will continue to crop heavily for a longer period.

A feeding with sulphate of ammonia, blood and bone, or nitrate of soda will help to produce strong, healthy runners. If runners are not required, then a light feed of bonedust or a mulching with well-rotted manure will carry them through the winter.

A Pressing Matter.

A Scotchman was discovered wandering around the Goulburn Valley with a pair of rumpled trousers over his arm, "Can I help you in any way?" asked a kindly fruitgrower. "Man," replied the Scot, who was evidently a newcomer, "I'm looking for the Kyabram Free Press."

THE AUSTRALIAN CITRUS INDUSTRY.

Report of Murray Valley Development Committee

(Continued from March "Fruit World.")

Production Costs.

WITH INCREASING COMPETITION facing the industry, due to extended plantings in all States, and to the period of depression through which Australia is passing, it is apparent that cultural efficiency will be the basis of successful citrus production. The price of citrus fruits grown in a particular area are affected not only by competition from citrus fruits grown in other areas, but also by the production of competitive deciduous fruits. It would seem, therefore, that the tendency in future seasons will be for prices to recede to a much lower level than those which prevailed during the 1929 season, which, it will be recalled, was a particularly satisfactory one for most of the Murray Valley growers owing to the shortage of the Apple crop in that year, and the favorable conditions which extended throughout the whole of the marketing period.

Returns to the grower are largely dependent upon his efficiency as a producer, and upon his ability to obtain results commensurate with his operating costs and capital outlay. Prices are usually beyond his control, but costs of production, yields, and effective distribution are matters concerning which constant study is required. In past seasons many growers have done well out of citrus, and to a certain extent may have been lulled into a sense of false security to the extent that they have probably not been as mindful as would otherwise have been the case of the need to reduce their production costs to a minimum. Few growers record in sufficient detail the data necessary to enable them to work out the costs of the several varieties of citrus which they produce, and consequently are not in a position to know what are the **most profitable types to grow** nor are they in a position to ascertain the causes contributing to low profits, which may result not only from poor prices, but also from light yields due to too much water, inadequate fertilisers, insufficient spraying, or other factors; yet precise knowledge on these matters is essential to efficient management, and to the reduction of costs to a minimum.

Because of the importance of these matters, the section of this investigation relating to the cost of production throughout the Murray Valley areas during the 1929 season is of special interest. The investigation included a detailed study of costs, including interest on capital in respect of all trees of eight years and over on 91 groves situated in the districts specified on page 61 of the report.

Reference to the main cost of production table, which contains arrays of costs for each district based upon the weighted average costs of each grower whose records were regarded as being reasonably reliable, will show that the acreage cost of cultivation ranged as follows:—

District.	No. of Growers.	Total.	Principal items contributing to variation in cost. Fertilisers.	Labor.	Water.
Barham..	4	25.8	4.32	13.4	1.01
Swan Hill-Murrabit	6	27.43	3.66	15.58	.94
Murrumbidgee	32	28.16	5.1	13.96	.45
Tresco-Nyah	5	29.19	5.38	13.47	3.64
Renmark, Waikerie, Berri ..	16	32.73	8.01	13.45	4.84
Cobram-Barooga..	7	32.83	3.97	17.66	2.78
Goulburn Valley	9	34.55	6.98	18.18	.82
Curlwaa	4	35.54	4.8	19.67	1.87
Mildura	8	43.75	12.09	18.67	4.02

When reduced to a per case basis, the above costs, after allowing for picking and packing charges, worked out to the amounts shown in column 3 below; the total unit cost, inclusive of interest on capital at 6 per cent., but excluding depreciation of trees, is given in column 4. The net return and the net profit per case are also included (columns 5 and 6), so as to indicate the margin available to growers for the purpose of meeting falling prices. It should be mentioned, however, that in districts where yields were adversely affected by frosts and unsuitable conditions generally, the profit per case is not a useful guide in this respect, inasmuch as in a favorable year the margin would have been considerably higher. It is reasonable to assume, therefore, that if yields in those districts were averaged over a period of years, a much higher figure would have resulted, and unit costs would have been much lower.

(1) District.	(2) Yield.	(3) Cost per case excluding interest.	(4) Cost per case plus interest.	(5) Net Return per case.	(6) Net Profit per case.
	Bush.	s.	s.	s.	s.
Cobram and Barooga	305	4.43	5.14	7.78	2.64
Renmark, Berri, Waikerie ..	224	4.95	6.03	11.72	5.69
Goulburn Valley	220	5.27	6.13	8.99	2.86
Murrumbidgee..	173*	5.55	6.66	10.19	3.53
Barham	138†	5.57	7.06	9.02	1.96
Curlwaa..	181	5.95	7.21	11.41	4.2
Mildura, Irymple, Merbein ..	218	6.31	7.41	11.14	3.73
Tresco, Nyah	144†	6.31	7.93	9.83	1.9
Swan Hill, Murrabit	116†	7.27	9.03	9.97	.94

*Low yield due to light Valencia crop.

†Low yield due to severe frost losses and the unsuitable conditions generally in the Tresco-Nyah district.

From the figures shown in the preceding tables in respect of both the orchard costs of production per acre, and the total cost per case, it will be noted that costs varied greatly from district to district. In the case of the former, the differences were mainly due to the variations in the amounts charged for fertilisers, water, and maintenance labor, and in the latter to variations in the acreage yield.

Profits per case also differed widely, the main contributing factors being yields and net realisations. Subject to the limitations of a survey which included the operations of one year only, and also to the limitation of the small number of accounts included in respect of some of the districts, it may be concluded, from the data presented, that growers in the Renmark, Waikerie, Berri, Curlwaa, Mildura, Irymple, and Merbein districts, and the Murrumbidgee irrigation areas (assuming their unit costs in future seasons will not exceed the average of their respective districts for the 1929 season) are in a generally satisfactorily position to meet, to the extent of 3/- per case, any fall in prices that may result in future years, although in most of the districts named there would only be a small margin of profit available for contingencies. With a similar fall in price for fruit grown in the Goulburn Valley and the Cobram-Barooga areas, the growers in those districts would find it difficult to obtain payable returns which exemplifies the necessity for economy in production. As the season reviewed was an unfavorable one as regards yield in the Swan Hill-Murrabit, Nyah-Tresco, and Barham districts, it is not possible to express an opinion concerning those areas.

It is not possible, at the present time, to forecast future prices, either in Australia or in the principal world markets. It has been shown that in a number of the important citrus producing countries large acreages are yet to come into production, and the effect of largely increasing supplies on world prices may be such as to render it more profitable to dispose of Australia's increased production on the domestic market.

As far as the domestic market is concerned, it is obvious that the existing depressed conditions must have an adverse effect on prices, apart from this, a long range view of the prospects leads to the conclusion that, if remunerative export markets cannot be developed, prices in Australia will be lower than the average of those obtaining during the last few years. Emphasis must, therefore, be laid upon the importance of increasing efficiency on groves, and reducing costs of production, if the industry is to continue to be profitable.

The principal conclusions emerging from the investigation may be enumerated briefly as follow:—

(1) The necessity for a conservative policy in regard to new plantings.

(2) The outstanding importance of the maintenance of a high standard of efficiency in production.

(3) The importance of early action to explore the possibilities of developing a more extensive export trade, particularly with Canada and the United Kingdom.

(4) The need for a more representative organisation of the industry to render possible the extension of export.

(5) The dependence of the industry upon Government co-operation in the exploration of markets, and the conduct of scientific research into cultural and irrigation practices and problems associated with conditions of transport, and the preservation of fruit during transport.

To stimulate the interest of growers in recording their costs, and as a return for the services they rendered to the investigating officers who conducted the field survey, it is proposed to furnish them with an analysis statement of their operations for the 1929 season, together with the average costs prevailing in their respective districts.

The Committee's Thanks.

Thanks and indebtedness are hereby expressed to the Departments of Agriculture and to the Irrigation Commissions of the States of New South Wales, Victoria, and South Australia, whose officers were ever ready and willing to do all in their power to collaborate with and ably assist the Commonwealth officers who personally conducted the investigation; to the Departments of Agriculture in Queensland and Western Australia for the assistance rendered concerning areas planted, and the possibilities of future production in those States, and to Mr. J. A. Parkes, secretary, and Mr. G. E. Kitchen-Kerr, market manager, Federal Citrus Council of Australia, for their collaboration on certain aspects of the investigation.

To the growers throughout the Murray Valley irrigation areas, who co-operated in the cost of production inquiry, which was, perhaps, one of the most extensive of its kind yet attempted in Australia, special thanks are due. Although accustomed, from time to time, to supplying data, required by Commonwealth and State authorities, it was something entirely new for them to be asked to supply information tantamount to a complete disclosure of their financial position. That they interested themselves so whole-heartedly in the work that was being undertaken is a striking testimony of their desire to join in any movement calculated to promote the prosperity of the industry, and to ensure that future development, if and when decided upon, will be proceeded with on sound lines.

Summary.

After considering the citrus report, of which the foregoing is a summary, the River Murray Advisory Committee, on whose behalf the investigation was made, adopted the following resolution:—

"That, having considered the report of the Development branch upon the citrus industry, the Committee is agreed in regard to:—

(a) The necessity for a conservative policy in regard to new plantings until the methods of storage and transport have been further improved.

(b) The outstanding importance of the maintenance of a high standard of efficiency in production.

(c) The importance of developing a more extensive export trade, particularly with Canada, the United Kingdom, and the East.

(d) The need for a more representative organisation of the industry to bring about standardised methods of packing, wider distribution, and orderly marketing—if necessary, by enabling legislation.

(e) The dependence of the industry upon Government co-operation in the exploration of markets, and the necessity for an intensification of scientific research into cultural and irrigation practices, and problems associated with conditions of storage, transport, and the preservation of fruit during transport."

Great effort from great motives is the best definition of a happy life.

Real happiness is cheap enough, yet how dearly we pray for its counterfeit.

Only things to eat and drink and wear are high in price. Happiness is at the same old figure.

Priest: "Why, Paddy, both your tyres are flat!"

Terence (with bicycle): "Sure, yer riverince. I let them down because the saddle was too hoigh."

A Strong Subject.

Jones: "Name three strong nouns."
Brown: "Limburger, garlic and onions."

Cold Storage Investigations.

Experiments with Apples in New Zealand.

Orchard Cultural Conditions are Big Factors in Successful Cold Storage.

(By L. Tiller, Orchard Chemist, Cawthron Institute, Nelson, N.Z.)

EXCELLENT INVESTIGATIONAL WORK regarding fruit matters has been conducted under the auspices of the Cawthron Institute, Nelson, N.Z.

The range of subjects dealt with is a large one. Cold storage, however, has been one of the major items. We now quote from the Institues' cold storage publication, No. 7, as follows:—

THE PROBLEMS attending the cold storage of Apples involve a study of many factors, both before and during the actual process of storage, for these have an important bearing on the disease-resisting powers of the fruit. These influences do not commence at the orchard, but go back to the initial preparation of the tree, for it was then that the selection of stock material was made.

From this initial factor the result is influenced by the method of planting, manuring, cultivation, pruning, harvesting practice, climate and many other items in addition to factors in storage.

Many of the influences are directly connected with orchard routine, and it is therefore necessary to pay the utmost attention to these in order to secure the best possible results in storage. The difficulties of fruit storage are due to the fact that the

fruit is a living organism

dependent for its welfare on the uninterrupted progress of chemical changes that take place in its tissue during the natural process of ripening. The application of refrigeration is only able to effect a retardation of these chemical reactions, and it has therefore to be recognised that each individual line of fruit has a definite potential storage life beyond which deterioration will rapidly set in. For this reason, regular visits of inspection should be made to the store in order to ascertain whether the fruit is approaching its prime.

The diseases of storage

can be grouped under two headings:—

(1) There are the primary diseases, the so-called physiological or functional diseases, which as far as can be ascertained are not due to the presence of fungi or bacteria, but are caused through a disturbance of the natural living processes in the Apple. The main troubles of this class are internal breakdown or flesh-collapse, deep scald superficial scald, and Jonathan-spot.

(2) The other class consists of what may be termed the secondary diseases of storage, fungal in nature, and having their origin in the orchard.

Internal Breakdown.

Of the first class the most important is internal breakdown and it was owing to the prevalence of this disease that the Cawthron Institute was first approached by the fruitgrowers in 1920 and asked to carry out experimental work with a view to ascertaining the remedy and, if possible, the cause of the trouble. During the next two years small scale experiments were conducted by Professor Easterfield and Mr. J. H. Thorp, orchard instructor, and since 1923 the work has been continued on a much more extensive scale.

Without going into the detailed results obtained year by year it will be sufficient to summarise under various headings the most important facts ascertained to date concerning internal breakdown. With this, as with all other fruit diseases, a considerable amount of repetition is necessary from year to year in order to eliminate the possible effect of seasonal influences.

Storage Temperature.

In the early experiments it had not been possible to differentiate clearly between the influences of temperature and relative humidity as the two are intimately related one to the other. For the work of the 1925 season, however, it was possible through the courtesy of the Directors of the Nelson Freezing Company to construct a small, independently controlled chamber for experimental storage, and as a result of tests carried out in this room it was found that the main storage factor inducing breakdown was too low a temperature. Temperatures were not so low as to cause actual freezing injury, but were too low to allow of the normal biological processes taking place and damage resulted in consequence.

Storage Humidity.

Since the construction of the small experimental chamber it has been possible to design an experiment wherein comparable fruit has been stored at a definite temperature, but under two different relative humidities. With all varieties of Apples so far tested, the results have shown that there is more breakdown in the fruit when the store air is very moist than there is if the air is comparatively dry. It is therefore very essential that the humidity in storage be not allowed to rise excessively high or else breakdown losses will be appreciably increased.

Ventilation.

Analyses of store air have shown that in the stores in this district the amount of ventilation given, either intentionally or accidentally, is sufficient to prevent any appreciable accumulation of carbon dioxide. Internal breakdown is therefore quite distinct from brown-heart, a trouble due to suffocation of the Apple in concentrations of carbon dioxide above 10 or 12 per cent.

Other tests have shown that even inside a tightly boarded case in the centre of a stack of fruit the com-

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position of the atmosphere is almost indistinguishable from that of the store, the deleterious gasses diffusing out from the case as fast as they are formed. There was no difference in the amount of breakdown occurring in tightly-boarded and open-boarded cases.

Maturity.

It has generally been found that immature fruit has developed less breakdown that mature fruit, and both have shown less than very ripe fruit. Immature fruit, however, is subject to excessive shivelling. Under the improved conditions now obtaining in cold-storage there is nothing to be gained by picking the fruit while still in an immature condition.

Delayed Storage.

The Jonathan is the only Apple the keeping quality of which has not been detrimentally affected by holding at the orchard between picking and storage. With other varieties, especially Sturmer, the amount of breakdown has been greatly increased by delay before storage. Fungal diseases, moreover, are likely to develop on fruit which is not placed under refrigerated conditions immediately after picking.

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Soil Type.

Striking differences have been observed between the powers of resistance to internal breakdown exhibited by fruit grown on various soils. Many factors are bound up in this, such for instance as reserves of plant food constituents, texture, state of cultivation, and situation. In the Nelson district it so happens that all the heavier loams used for fruitgrowing are comparatively poorly supplied with plant foods whereas the lighter loams have a more adequate supply.

Soil texture and fertility have therefore had to be considered together. It has been found that for some half dozen of the most widely grown varieties, fruit from fertile light loam is more resistant to breakdown than is fruit from the poorer heavy loams. This difference is now generally recognised amongst companies operating cold-stores and, wherever possible, storage conditions are provided to suit the requirements of the fruit.

Manuring.

LITTLE IS KNOWN at present concerning the detailed effects of the various types of fertiliser on the storage quality of the fruit, but there is considerable evidence to show that the keeping quality of fruit can be improved by the use of a well-balanced orchard manurial programme designed to meet the needs of the trees to which it is being applied. If the growth of the tree is forced either by over-manuring or by employing an ill-balanced mixture there is a danger of the production of soft, large-sized Apples which will have only a short storage life.

Root Stock.

With the establishment of Aphelinus mali, the woolly aphis parasite, the need for the use of an aphis-proof stock on which to grow the tree is not now as imperative as it formerly was. The Cawthron Institute has therefore made a beginning on the testing of other stocks with a view to ascertaining if they are more suited to the requirements of our soils from the point of view of tree growth, fruit yield and quality, etc. Cold storage trials are being carried out in conjunction with these experiments and it has already been found that the Jonathan variety grown on a seedling stock is of very superior storage quality, developing less than half the amount of severe breakdown showing in fruit grown on other stocks.

Internal breakdown is not a simple disease, but consists of a class of diseases of various types, almost all of which can apparently be brought about by the same unfavorable set of orchard or storage conditions.

The characteristic of the disease is a browning of the tissue, and in some instances the browning is confined to the core, in others it commences at the primary vascular bundles, while in others again it appears to have its origin at or near the surface. One form of the disease, noticeable particularly in Sturmer and Jonathan, appears to develop very little at temperatures much above 32 deg. F. This form of the trouble makes its initial appearance in the flesh between the skin and the core, is quite sharp in

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WESTERN AUSTRALIAN TESTIMONY

Mr. S. E. Hambley, of Mount Barker, Western Australia, writes as follows:—

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outline, and appears similar to if not identical with a type which has been studied in detail by certain investigators in the United States. Most types of breakdown in their early stages are not detectable from the external appearance of the Apple, and it is this fact which renders the disease particularly troublesome in commercial practice.

Scald.

A type of disease of quite a different character is that known as scald. This is met with in two forms, deep scald and superficial scald.

Deep scald is, in New Zealand, found most commonly on the Jonathan, although on infrequent occasions it has been seen on other varieties. In its earliest stages it appears to commence in the flesh tissue underlying the skin and within a very short time indicates its presence by a brown discoloration of the skin. This browned area spreads and assumes an irregular, wavy outline which very sharply separates the damaged area from the adjacent sound tissue. Ultimately the damaged part becomes sunken and is readily attacked by fungi, especially by the black-rot fungus.

A characteristic of the trouble is that the underlying flesh tissue is also browned to a more or less uniform depth below the surface and the penetration is seldom more than half an inch. It has been found that deep scald is associated chiefly with storage at too low a temperature. The employment of a storage temperature above 35 deg. F. has given fairly complete control of the trouble. It has also been ascertained that immature fruit is more susceptible than ripe fruit.

Superficial scald is the name given to a storage disease in which portions of the skin of the Apple become browned without the underlying tissue being visibly affected in any way. It is not very often of commercial significance on the varieties commonly grown in this country. The method of control, viz., the wrapping of the fruit in paper impregnated with clear paraffin oils, is due to American investigators.

Jonathan-Spot.

Jonathan-spot is, like superficial scald, a disease which affects only the skin of the Apple. As its name suggests it is found chiefly on the Jonathan, although it has been seen on other varieties.

In its early stages it somewhat closely resembles and is frequently confused with incipient bitter-rot, a fungal disease common on all varieties of Apples. There are certain points, however, by means of which it is usually possible to distinguish the two. Bitter-rot is usually of a rather darker color, occurs almost entirely at the lenticels or breathing apertures of the Apple, and is usually slightly sunken; Jonathan-spot does not often commence at a lenticel, and when of an appearance in which it might be confused with bitter-rot, is not sunken.

Oiled wrapping paper

has been tested as a specific, but the control secured was on the average only about eight to ten per cent., and probably not sufficient to warrant the extra expense entailed by the use of the special wrap.

In view of the fact that typical Jonathan-spot has been seen both on windfall Apples in the orchard and on picked fruit in the packing shed, **it seems probable that the ultimate control of the disease will be bound up with orchard conditions.**

Climate may be found to have an influence, as the trouble is not confined to fruit grown on any one type of soil. The experiments have not so far indicated any consistent effect of storage temperature or humidity on the incidence of Jonathan-spot, but it has been found that much more occurs on late-picked fruit than on early-picked fruit.

Where the disease is troublesome it is thus desirable that the fruit should not be left longer on the tree than is consistent with adequate color and flavor.

Fungal Diseases.

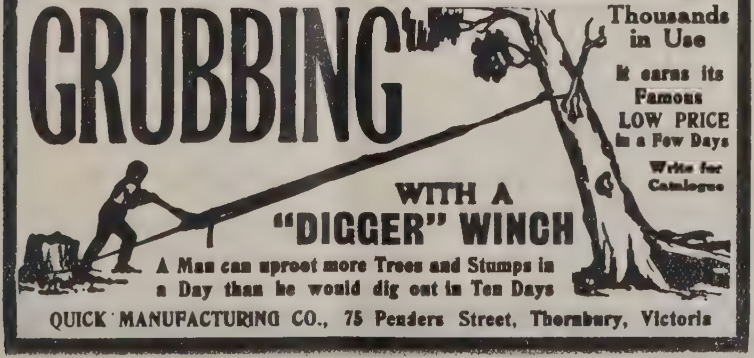
THE FUNGAL DISEASES of storage, such as blue mould, bitter-rot, botrytis, black-spot, etc., are introduced into the store from the orchard in the first instance either on the case, packing material, or, most commonly, the fruit. As far as the store is concerned they are secondary diseases and their control must rest mainly with the grower. There is undoubtedly much heavier loss through fungal troubles in storage than there should be. Much of this is due to the storing of inferior and blemished fruit, which is not only likely to rot itself but in so doing will produce fungal spores which can be carried by air currents in the store and be deposited on sound fruit.

A fungal-diseased Apple thus becomes a potential source of infection to fruit situated at a distance as well as to fruit in its immediate neighborhood. Even black-spot can be disseminated in this way. Packing in a careless manner so as to induce bruising or packing bruised and much-handled fruit is also conducive to fungal loss, on account of the fact that even light external pressure may be sufficient to assist fungal spores to gain an entry into the skin of an Apple.

Care in orchard hygiene

immediately suggests itself as the primary means by which it is possible for reasonable immunity from fungal troubles to be secured. The work should begin at pruning time and should be followed up by systematic spraying till as near as possible to picking time.

Fruit export requirements will of course militate to some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extent against late spraying, but it is really desirable that fruit intended for long storage should have been sprayed within a fortnight or three weeks of picking.

At the packing shed all reject fruit should be destroyed as soon as possible or if it is dumped it should be kept as far away from the shed as is possible.

The employment of old previously used cases is most strongly deprecated unless they are thoroughly sterilised before use. If, as often happens, the fruit intended for local storage is the export residuum immediately below "Good" grade, it is highly desirable that this class of fruit be placed in store at the earliest possible opportunity.

It is inadvisable to wait until the export is over before storing second grade fruit and, moreover, such fruit should not be expected to have an extremely long storage life. An illustration of this contention can be quoted from actual experience. A line of fruit received its final spray some two months previous to its being picked for export. The second grade fruit was cased up and stacked in the packing shed for three weeks, until the export season was over. when it was sent into store apparently quite sound. After only a comparatively short storage period it was suddenly discovered that the consignment had developed exceedingly bad fungal trouble and the fruit had to be destroyed as worthless.

It can be readily understood that there are sufficient problems connected with the local cold-storage of fruit to constitute the growing of fruit for storage an entirely separate phase of the industry. This, however, is generally not commercially possible and where in consequence local storage is made an adjunct to the export industry it is essential that the utmost care be taken with the fruit intended for storage.

Poor Sultana Crop.

The Sultana crop at Woorinen and Nyah is reported to be sixty per cent. lower than last season. Currant crops show a little better result, while table Grapes have produced well. The marketing of table Grapes is causing growers in the Swan Hill area much concern, owing to the large quantities of this fruit produced this season in other parts of the State.

Dried Fruit Notes.

DRIED FRUIT EXPORT.

Proportions Announced.

The Minister of Agriculture for Victoria has announced that the following proportions of dried fruits to be marketed outside the Commonwealth had been fixed for 1931:—Currants, 90 per cent.; Sultanas, 87.5 per cent.; Lexias, 70 per cent.

LEVIES ON DRIED FRUITS.

It has been anonunced by the South Australian Dried Fruits Board that a levy of one-twenty-fourth of a penny is to be imposed on all dried fruit produced in that State during 1931.

A levy of 1-32nd of a penny per lb. on dried Currants, Sultanas and Lexias produced during 1931 has also been imposed by the New South Wales Dried Fruits Board.

Those who grow less than 5 cwt. of fruit are exempt from the levy.

N.S.W. EXPORT QUOTAS.

The following proportions of dried fruits of 1931 output from New South Wales is to be marketed outside the Commonwealth:—Currants 65 per cent., Sultanas 65 per cent., Lexias 70 per cent. The quotas have been fixed by agreement between representatives of N.S.W. growers and the A.D.F.A.

The possibility of the eradication of bunchy-top from Queensland Banana plantations is mentioned by our Queensland correspondent.

First Customer, to waiter: "Steak and eggs, please."

Second Customer: "The same, but eliminate the eggs, please."

Waiter, to Second Customer (after awhile): "Please sir, do you mind having your eggs cooked ordinary, our 'liminator's busted?"

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NEW SOUTH WALES

ORANGES AND MANDARINS in the hills districts around Sydney have set fairly heavy second crops. This is not to the benefit of growers.

In the coastal areas the fumigating of citrus trees was delayed during March by windy weather.

Growers who have relied an spraying their trees to control pests report good results.

Young Trees and Frost.

Newly-planted citrus trees are liable to injury by frost. For the first two or three years young citrus trees should be covered to protect from frost.

* * * * *

PASSIONFRUIT VINES are coming along nicely in the Cumberland district, and a heavy winter crop is setting. Spraying will be necessary should brown spot show up. So far this trouble is conspicuous by its absence.

* * * * *

APPLE EXPORT is in progress at Sydney. Inspectors are exercising strict supervision. Early in March a consignment of 2,500 cases of Apples—mainly London Pippins—intended for shipment by the "Nestor" and "Barrabool," came under review. On first inspection it was proposed to reject 700 cases because (mainly) of hail damage. Subsequently, however, it was decided to reject 350 cases and to lower the grade marks of the other 350 cases. The rejected fruit was offered for sale in Sydney.

The Batlow Packing House and Cool Stores Rural Co-operative Society Limited.

Last season, 1930, approximately 125,000 bushel cases of Apples and Pears were handled by the above mentioned Society.

Sales were: 55,000 through agents, 50,000 f.o.r. Batlow, 15,000 export. Fruit trucked for non-shareholders amounted to 29,000 cases, making a total of 154,000 cases of Apples and Pears despatched from the Society's siding.

The average price for locally sold fruit, inclusive of sales of cull and factory Apples, was 7/- f.o.r. Batlow. Apples exported averaged only 4/- f.o.r. Batlow, owing to the main shipment meeting a weak and falling market.

The variation in sales on account of individual growers was considerable, the best average being 9/- per case f.o.r. Batlow for 16,000 cases of Apples and Pears, all grades and sizes.

1931 Harvest.—We had on the trees up till February 28, the best crop for quality, size, and quantity, the district has so far produced, but on March 1 a severe hail storm occurred. About 40 per cent. of the fruit in the district has been affected, and some growers have had their crops more or less ruined.

1931 Export.—About 10,000 cases of Apples and Pears are being exported from the district this year, and this is now practically confined to those growers who missed the hail injury. Practically all export fruit is going to London or Liverpool, no boats being available for Hull.

The tact to handle difficult situations fairly and acceptably, because of your known fairness and good judgment, is a valuable asset for any man to possess.

QUEENSLAND FRUIT IN SYDNEY.

The quantity of Queensland fruit received in Sydney during the past month amounted to 1,169 tons, consisting chiefly of Bananas, Pineapples and Tomatoes (writes Mr. P. S. Chinn, Sydney representative of the Committee of Direction of Fruit Marketing, under date, March 20).

The supplies of Queensland Bananas have been on the short side, whilst supplies from N.S.W. districts have been maintained, prices generally have been fair, particularly for the last couple of weeks, considering the prevailing depression. The quality of Bananas generally is very fair, although some of the November dump fruit has been somewhat on the short side.

Pineapples have been in good supply, but unfortunately water blister has been very bad this year, especially during the past two or three weeks, but prices have been well maintained for good quality sound fruit.

Supplies of Tomatoes from the Stanthorpe district have not been so heavy this year as in previous years, due no doubt to the more or less erratic state of the market, reasonably good prices have obtained only for very short periods, otherwise the ruling prices have been more or less unsatisfactory to growers.

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There have been only a few small consignments of Apples on the market from the Stanthorpe district during the past month, mostly Jonathans, and these sold fairly well.

Summer fruits will shortly be going off the market, when it is anticipated that there will be an all round improvement in the demand for Queensland fruits, the demand for Bananas in particular should improve as a result of this.

The man who tries to get something for nothing usually gets nothing.

CURLWAA AND COOMEALLA IRRIGATION AREAS.

The Minister for Agriculture (Chairman of the N.S.W. Water Conservation and Irrigation Commission), has received a report from the local Fruit Instructor, dealing with the conditions and prospects on the Curlwaa and Coomealla Irrigation Areas, for the period from December 13, 1930, to February 14, 1931.

The Minister is pleased to note that the fruit being harvested on the Curlwaa Irrigation Area is generally excellent, and a considerable improvement on the quality of last year's fruit. Favorable weather conditions have assisted in no small degree the harvesting of Peaches and the completion of the harvest of Apricots and Nectarines. Some of the dried Peaches are the finest seen, in quantity, for some time.

In Grapes, sun-scald and burning are noticeably absent, and as a result a very fine sample of fruit, particularly of Sultanas, is showing on the vines. Dried fruit of both Currants and Sultanas will be of very good quality.

The Coomealla Irrigation Areas should produce, this season, a fairly large tonnage of Sultanas. Settlers are busy preparing for a larger quantity than last year's harvest, owing to increased area coming into bearing.

Spraying was satisfactorily carried out during the season. It is considered that conditions in both settlements are favorable to the planting of larger areas of green manure crops, and attention is being paid to this valuable method of soil improvement.

MANCHESTER AS A PORT.

THE ADVANTAGES of shipping Australian fruit direct to the port of Manchester are set forth in a letter from Capt. W. J. Wade (representative of the Port of Manchester) to the Victorian Fruit Marketing Association as follows:—

Marketing Australian and Tasmanian Fruit.

In each of the 17 weeks from the beginning of May until August 22 last year, Australian and Tasmanian Apples were sold in the Imported Fruit Salesrooms at Manchester in sufficient quantities to warrant inclusion in the official "Market Reports" issued weekly by the Ministry of Agriculture, of the average prices realised, although only two direct shipments were sent to Manchester from Tasmania and one from Victoria.

The varieties sold included Adam's Pearmains, Cleos., Cox's, Dunn's, Jonathans, Ribston Pippins, Scarlet Pearmains, and Sturmers, and a comparison shows that **the average prices realised were almost invariably higher at Manchester than at any other port.**

When supplies are not available by direct shipment to meet the requirements of markets in the North and Midlands, the brokers and merchants at Manchester usually obtain them from London or elsewhere, which proves:—

First, that there is a constant demand for Australian and Tasmanian fruit in the area which Manchester serves, and

Second, that the strength of the market is such that prices ordinarily realised are so much above London parity as to cover the cost of transport to the North (approximately 9d. per case), and yield a satisfactory profit in addition.

For the reasons mentioned and the fact that the population within 75 miles' radius of Manchester is 14¾ millions (i.e., greater than within a similar radius of London), it might reasonably be assumed that arrangements would be made for regular direct shipments, but despite continuous efforts of Manchester merchants for some years, not a single ship has been allotted to load fruit from mainland ports to Manchester during the present export season, and only two from Tasmania.

Of the fruit imported into Great Britain **from all sources** in a recent year 27 per cent. was landed in London, but from Australia and New Zealand over 68 per cent. was landed at that port during the same period, which indicates a remarkable disparity between the methods of distribution of the latter as compared with supplies from other countries.

It is certain that until the requirements of other markets are supplied by direct shipment to the most economical points of distribution, and an end is made of the present system of centralising shipment and distribution of so large a percentage of Australian and Tasmanian fruit in London, growers and shippers will continue to lose huge sums represented by the cost of transport from London to provincial markets, consequent deterioration, and intermediate salesmen's commissions and profits.

Particulars are given of average prices realised for N.Z. fruit last season at Hull, Liverpool, London and Manchester.

PITTING MACHINES AT LEETON.

Twelve pitting machines worked by compressed air have been installed at the Leeton (N.S.W.) Cannery. Each machine can remove the stones of Peaches at the rate of 100 cases per day. The average of a fast worker by hand was 25 cases per day.

Now is the time to buy in your stock of Spraying Oil for the dormant period. A July spraying of Apple and Pear trees with Shell Redspray will stop the destructive work of Woolly Aphis, San Jose, Mussell and other Scale and Red Spider. Cherry trees will be freed from Scale pests; Citrus trees from Red Mite, Nectarines and Peaches from San Jose Scale; and Plums from Red Mite and Brown Scale.

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Victoria.

SOMERVILLE SHOW.

THE 35th ANNUAL SHOW of the Somerville Horticultural Society was held on March 18. In introducing Mr. S. M. Bruce, who officially opened the show, the President of the Society, Mr. T. W. Brunning, stated that it was gratifying to note that the number of entries constituted a record for the Society.

The fruit was excellent, both in quality and quantity. The judges commented very favorably on the exceptionally high standard of the fruit.

In the Pear section the prize-winners were:—Merrivale Nurseries, W. Boe, G. E. Shepherd, jnr., Walter Young, W. P. Mair, A. E. Thornell, J. Brunning & Sons, J. E. Simpson, S. Hawken, D. Murray, B. Murray, J. Firth, J. and B. Caldwell, F. W. Roper, T. White, R. Unthank and Miss M. Murray.

Apples.—Prize-winners were:—Merrivale Nurseries, R. J. Thornell, J. D. Grant, J. Brunning & Sons, W. Boe, J. Firth, Binnak Orchard, J. and B. Caldwell, A. H. Thornell, A. MacLaurin, D. Murray, S. Hawken, A. Sage, T. Barclay, W. Monk, W. Young, Mrs. R. Grimwade, C. Iles, Miss A. Grant, F. W. Roper, L. A. Pagoni, W. P. Mair, J. C. McLean, T. W. Brunning.

The prize for the champion tray of Apples in the show was secured by Mr. W. Monk, and the champion tray of Jonathans by J. D. Grant.

The Gerrard Shield for district packing was won by the Harcourt North State School; Tyabb Upper, second; Tyabb Lower, third. The fruit was well packed and very favorably commented upon. Other prizes for the fruit packing section were secured by Miss E. Dennett, J. De Bernardi, L. Denham, A. L. Dennett, D. Firth, E. Morrison.

The displays of preserved fruit, vegetables, flowers and plants, farm produce and other products all helped to make the show a success from every point of view.

Non-competitive displays of Dahlias were shown by Mr. G. R. Bailey, of Brighton, and Roses by G. L. Cole, of Tyabb.

The President of the Show was Mr. T. W. Brunning, Secretary, Mr. T. J. Pearce. Other officers are: Vice-President, Messrs. A. Firth, H. Gallus, T. G. Tyler, Dr. Anderson; Treasurer, Mr. W. E. C. Lamont; Committee, Messrs. A. Sage, J. E. Sage, C. W. Grant, J.P., Jos. Unthank, T. W. White, L. Hutchinson, J. C. K. McLean, H. H. Hawken, Geo. Royle, W. P. Hutchinson, F. Moore, N. Unthank, C. E. Thornell, Allan Thornell, T. Kennedy, J. W. Coldwell, W. Jouning and Cr. H. G. Overton. Auditors, Messrs. W. Ryan and F. R. Durrant.

FRUIT MERCHANTS AT PLAY.

When several of the Melbourne fruit merchants were detected practising with Melons on the concrete floors of the Wholesale Fruit Market, suspicion was aroused as to their intentions. Rumors were circulated that they were preparing for a match at bowls with the renowned Plotkin Brothers, whose fame as bowlers is only equalled by their prowess as fruit salesmen. Suspicions were confirmed on Wednesday, March 10, when Messrs. W. Warren (capt.), H. Heath, T. H. Hanger and Frank Booth, Senr., went forth from their stores and assembled at the City Bowling Green (Flagstaff Gardens), opposite the markets.

A big following of merchants and their assistants were quickly on the scene, and speculation was rife as to the result of the match.

Many contended that the secret practice with Melons would make Warren's team invincible, but there was a few knowing ones who had watched the remarkable shots brought off with Oranges by the Plotkin Brothers in private.

The game proved to be a "topping" one, and the Plotkin Brothers emerged victorious. The scores at the conclusion of the game were:—Plotkin Brothers 31, Warren's Team 15.

The final scores are not indicative of the play as a whole, for the losers put up a very good display, and with a little more practice might have won. It is understood that practice will be continued, using Coconuts.

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The Sugar Embargo.

Continuance Recommended by Committee.

Special Grant of £315,000 Recommended for Fruit Industry.

"WE AGREE that the price of sugar is one of the contributing causes of the difficulties of the fruit industry . . . ." is stated in the majority report of the Sugar Enquiry Committee signed by Messrs. A. R. Townsend (Department of Trade and Customs), A. J. Short (Queensland Canegrowers' Council), F. C. R. Curlewis (Australian Sugar Producers' Association), W. Young (representing fruitgrowers), and C. J. Fallon (representing employees). The enquiry lasted six months, it having been found, as forecast in this paper, that the two months prescribed in the terms of reference would be inadequate.

Majority Report.

The majority report is summarised as follows:—

1. That the embargo upon the importation of sugar into Australia be renewed and continued for a period of five years.

2. That subject to our third recommendation hereunder, the prices of sugar and the conditions of the sale thereof as set out in the present agreement be maintained for three years, and for the balance of the term, viz., two years, such prices and conditions be reviewed by the Commonwealth Government in the light of the circumstances then existing.

3. That the provision in the present agreement for the special price payable by manufacturers engaged in processing all fruit products for home consumption and the provision for the rebate on sugar contents of fruit products exported be eliminated, and in lieu thereof a clause be inserted providing that a sum of £315,000 a year be made available by the sugar industry for the assistance of the fruit industry as set out in this report. This provision is to be subject to review as in the case of the rest of the sugar agreement at the end of the three years period mentioned in recommendation 2.

Minority Report.

1. That the industry take definite steps to reduce the unprofitable surplus production.

2. That the prohibition of the importation of sugar be continued for a period of five years commencing from the date of the termination of the existing agreement between the Commonwealth Government and the Government of Queensland, August 31, 1931.

3. That prices of sugar to Australian consumers be reduced by £2/6/8 a ton for the two years ending August 31, 1933, and at that time a review of the conditions of the industry be made by the Commonwealth Government with a view to determining the practicability of a further reduction in price.

4. That the responsibility of seeing that the proposed reductions are passed on to domestic consumers by wholesale and retail distributers be placed on the industry by a definite provision in any new agreement.

5. That the present rebate of £6/5/1 a ton to manufacturers engaged in processing fruit products for home consumption be continued.

6. That a committee comprised of a representative from (a) the Commonwealth Government, (b) the Queensland Sugar Board, (c) the proprietary fruit processors, (d) the co-operative fruit processors, (e) the proprietary fruitgrowers, and (f) the co-operative fruitgrowers be established for the purpose of disbursing the rebate of £6/5/1 a ton, together with the reduction of £2/6/8 recommended in this report.

7. That the rebate paid to exporters in respect of Australian cane sugar contents of manufactured goods exported be continued as provided in the agreement between the Commonwealth and Queensland Governments dated July 25, 1928.

8. That the Queensland Government examine the economics of the results of the recent experiments in the manufacture of industrial alcohol from "b" syrup carried out at the Sarina distillery, and, if sound, endeavor to obtain the co-operation of the suppliers of petrol in arranging for its distribution.

Signed by the Director of Development (Mr. J. Gunn), Mr. F. A. L. Dutton, representing manufacturers who use sugar or raw material in their products, and Mrs. Eliza Morgan, representing domestic consumers.

Majority Report Reviewed.

The majority report deals exhaustively with the several matters included in the terms of reference, i.e., costs, profits, etc., in sugar production; financial condition of growers, and conditions of workers in the sugar industry; the existing sugar agreement and any variation thereof; efficiency in sugar fields and factories, land values; economies in sugar production, the effect of sugar prices on manufacturing industries, and on fruitgrowing and processing; any possible reduction in sugar prices; necessity for continuance of embargo; relation of sugar prices abroad to the industry in Australia; over-production of sugar, utilisation of by-products and alien penetration.

After dealing with the efficiency in production, the report traverses at length the arguments for and against the embargo, then after pointing out the inadequacy of a tariff (because of the violent fluctuations in the price of sugar), the continuance of the embargo is recommended subject to proper safeguards for the various classes of consumers in relation to manufacturing and retail selling prices and to effective control of production.

Over-production was brought about through several causes, but chiefly by the price of £30/6/8 per ton for raw sugar, instead of £22 recommended by the Royal Commission.

Sugar and Fruit Industries.

The effect of sugar prices on manufactured goods and fruit processing in particular is dealt with in detail. Summarised, the rebate of £6/5/1 per ton for sugar used in fruit processing for home consumption is held to be justified.

Over-production of fruit is stated to be clearly responsible for most of the difficulties of the soft fruit industry, and this has been largely brought about by extensive soldier and closer settlement schemes. Sugar prices were a contributing factor.

The decline in the per capita consumption of factory jam from 18 lbs. in 1912 to 11½ lbs. in 1928-9 is attributed to intensive competition of new types of popular foodstuffs. Taking the fruit industry as a whole, i.e., jam and canned fruit combined, more fresh fruit per capita is now being processed in Australia than in 1914.

Figures are given of the relative values of fruit and sugar per dozen tins of jam and canned fruit.

In 1911 the fruit value of Plums in a dozen 1½ lb. tins was 10d., sugar value 1/9½; in 1930 the Plums were valued at 9d., sugar 2/11.

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Sugar for Fruit Industry.

The majority recommends as follows:—

(a) That the sugar industry be required in future to contribute £315,000 per annum (instead of the present home consumption and export rebates amounting to about £205,000 per annum) for the assistance of the fruit industry.

(b) That this sum shall be contingent upon the present ordinary manufacturing price of sugar, viz., £36/11/9 per ton, being maintained; the total contribution of £315,000 per annum to be reduced to an extent equivalent to any reduction that may be made in the present ordinary manufacturing price of sugar; any such reduction to be applied to the home consumption rebate of £6/5/1 per ton;

(c) That this fund be disbursed to the various sections of the fruit industry by an independent committee consisting of one representative of each of the following:—

The Commonwealth Government, to be nominated by the Minister for Trade and Customs, as the Minister controlling the sugar policy.

The Queensland Sugar Board, to be nominated by the Sugar Board.

The growers of jam fruits, to be elected by growers supplying jam fruits to manufacturers, at a conference fully representative of such growers.

The growers of canning fruits, to be elected by the Australian Canning Fruitgrowers' Association.

The proprietary manufacturers of fruit products, to be elected by a conference of proprietary manufacturers to be called for that purpose.

The co-operative and State manufacturers of fruit products, to be elected by the co-operative and State controlled canneries.

(d) That the committee shall, out of this fund continue to pay the home consumption rebate (now £6/5/1 per ton) to manufacturers of fruit products, provided only that such manufacturers may be required by the committee to pay such prices to the growers for their fruit as the committee declares to be reasonable.

(e) That rebates shall be paid only to bona-fide manufacturers on completely-processed fruit products made entirely with Australian materials, and fundamentally composed of Australian fruit or fruit juices.

(f) That the committee shall, out of this fund continue to pay rebates on the present basis on the sugar contents of all manufactured fruit products exported from the Commonwealth.

(g) That the Committee be directed to co-operate to the fullest extent with the Canned Fruits Export Control Board, so as to conserve in the best possible manner the interests of the canned fruits trade and the policy of that Board, in regard to any assistance that the committee may propose to extend to exported canned fruits.

(h) That the Minister for Markets be requested to make available the services of his officers, where necessary, to give effect to the decisions of the committee, checking rebate claims, and paying all amounts due; funds for such payments to be made available to the Department of Markets by the Queensland Sugar Board.

Details of Minority Report.

The Colonial Sugar Refining Co. is not obtaining more than a commensurate return for the services it renders to the Queensland Government, but it is thought by the Gunn section of the committee that quite apart from its share of the decrease for milling it should make some contribution towards meeting the reduction in the price of sugar recommended.

The cost of the industry to Australia is calculated on a conservative basis at £5,490,000 a year since 1925. In the earlier days of price fixing the cost would have been much greater. Cost of producing sufficient sugar for Australia's home requirements over and above the price at which it could be imported duty free is set down at £3,315,000 a year, and the loss on export at £1,500,000.

Payment to growers and millers in excess of the cost of production, plus depreciation and 5 per cent. interest on capital, is £675,000 a year. The cost of the industry to Australia over and above the sum necessary to maintain production sufficient for Australia's requirements is £2,175,000, which is equivalent to more than 0¾d. per lb. of refined sugar.

Rapid Expansion of Sugar Industry.

While the protection of the industry in respect of Australian requirements is regarded as conforming to national policy, it is pointed out that it was never contemplated that the policy in regard to sugar would result in such an expansion that about 46 per cent. of the 1930 crop should be exported. The expansion of the industry into export clearly indicates that the prices fixed for home consumption have been unduly high. To permit of a large surplus being sold overseas at an average loss of approximately £9 per ton is placing an unduly heavy burden on the Australian people. The **curtailment of production** is therefore regarded as essential in the national interests. It is a matter of urgency, yet it would be unwise to adopt too rapid an adjustment. The objective should be a gradual elimination of the unprofitable export. The hopelessly uneconomic nature of the export, the national waste involved in deliberately concentrating capital and labor on such an enterprise, and the burden imposed on Australia, particularly the unsheltered export industry—all these facts emphasise the urgency of the adoption of a policy for the future and the curtailment of uneconomic production.

Reduction of One Farthing Per Pound.

"The key to the curtailment of production is the future price of raw sugar," says the report. The reduction recommended is £2/6/8 per ton, or one farthing per lb. of refined sugar. This would reduce the return to grower and miller on raw sugar, refined for home consumption, from £26/16/- to £24/15/2 per ton. There need be no fear that the reduction suggested would have a disastrous effect on the industry. It was only the chaotic condition of the world market which prevented the members from recommending a reduction of a halfpenny per lb., i.e., £4/13/4 per ton. They were loth to recommend any action the effect of which cannot clearly be foreseen.

As general world conditions might become more stable, a **further revision should be made** within two years, with a view to considering the practicability of a further reduction in price. A reduction of £2/6/8 per ton of refined sugar would mean a saving of approximately £750,000 per annum to the sugar consumers of Australia. There would be no practical difficulty in passing on the reduction to the domestic consumer, because in actual fact sugar is very seldom purchased by the housewife in quantities of less than 2 lb. The responsibility for seeing the reduction is passed on should be placed upon the industry.

COLOMBIE EXPORT COMPETITION.

TO ENCOURAGE Victorian growers to improve their export pack, Mr. H. G. Colombie, in co-operation with his overseas principals, is continuing the competition, inaugurated in 1928, for a valuable challenge cup. Every grower by reason of exporting is automatically a competitor. The judging is done by Mr. J. M. Ward, Superintendent of Horticulture, and his officers, as the export season progresses. The cup becomes the absolute property of any grower who wins the competition three times, not necessarily consecutively. The maximum points awarded are as follows:—

External appearance of case—timber 10, labelling or stencilling 10, wiring 5; internal presentation of fruit—wrappers, if printed 10 (if plain, 5 points), correct height 5, alignment 5, compactness 5, wrapping 10; grading—uniformity of size 10, uniformity of color 10, quality and freedom from blemish 20. Total, 100 points.

T. J. POUPART'S REPORT.

Messrs. T. J. Poupart Ltd. report as follows under date February 20, Covent Garden, London:—Bramleys (home grown), best 9/- to 13/3, seconds 5/- to 7/- per bushel; C.O.P., 8/- to 10/- per tray of 24. Reports are also given regarding the sale of fruit at Spitalfields (London), Liverpool, Southampton, Bristol and Hull.

Mildura.—The Autumn Show of the Mildura Floricultural Society will be held in the Mildura Town Hall on Thursday, April 16. Schedules are now available from the Hon. Secretary, Mrs. N. L. Morton, Madden-avenue. Mildura.

The Chrysanthemum Show of the Mildura Society is to be held on May 7.

Two Scotchmen went bathing. One said to the other: "I'll bet you sixpence that I can stay under water longer than you."

The other said: "All right."

Both submerged, and the police are still dragging the water for the bodies.

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SHIPMENT TO ROTTERDAM.

(The Editor, "Fruit World.")

Dear Sir,—Being unable to dispute the facts set out by me in your January issue, Mr. Colombie has thought fit to resort to personalities against me in your February issue.

I again state most definitely that in my opinion, had the "Port Hunter" shipment been diverted to Hamburg, or to a United Kingdom port, the Hamburg market would not have been troubled or seriously affected by the competition submitted to their buyers from the Rotterdam centre.

Why has Mr. Colombie not disputed the figures as submitted by me? On the contrary, he completely side-steps the issue and brings in matters which are quite irrelevant.

Characteristics of a politician. He abuses and endeavors to hold up to ridicule (the other fellow) which is generally interpreted as a sure sign of weakness. Is it so with Mr. Colombie?

He states that comparisons are always odious, and immediately follows that statement by comparing the length of his experience as against mine. Why this fatherly interest? This, in my opinion, is further proof of Mr. Colombie's knowledge being only elementary. As a matter of fact, I have been associated with the fruit industry here and abroad for a longer period than that claimed by him. Should Mr. Colombie so desire, I would be pleased to give him reliable information in person and help him to avoid parading his ignorance through the public press.

Would your readers kindly note that in my original advice I was dealing with Australian fruit, and not fruit from foreign countries. It is in my opinion a short-sighted policy to endeavor to open up a new market for our Australian Apples if by so doing we are likely to compete with a well-established market in the vicinity.

Mr. Editor, as this correspondence has reached the stage of cheap personal advertisement, and having no desire for myself or my firm in that direction, I will conclude.

Thanking you for your kind consideration throughout this controversy,

I remain, yours faithfully,
J. W. BARKER,
533 Collins-street, Melbourne.

GRAPE DISTRIBUTION.

Carton Distribution by Red Cliffs Grape Growers' Association.

OWING to the heavy crop of Grapes in the Red Cliffs (V.) district, the growers decided to conduct an intensive campaign to dispose of the surplus. Mr. C. H. Cameron was sent to Melbourne to organise distribution of the Grapes in cartons.

These cartons were supplied by the Government: the fruit is packed at relief depots and sold by men otherwise unemployed.

Up to March 30, 2,631 cases have been disposed of by the various committees; this represents 32,000 4 lb. cartons and 5,000 2 lb. cartons. The return to the unemployed sellers has been approximately £660, to date.

The scheme has grown from 29 cases the first week to 776 cases last week, which speaks well for the quality of the fruit and the care on the part of the sellers to get the weight into the cartons.

Cartons containing 4lb. of Grapes are sold at 1/-. After allowing for all expenses (freight, cases, and all charges), this gives the grower a net return of 3/9 per case for the fruit.

QUEENSLAND FRUIT IN MELBOURNE.

THE total tonnage of Queensland fruit received in Melbourne during the month of March was 1,691 tons, consisting of Cavendish and Sugar Bananas, Pineapples, Oranges, Grapefruit and Monstera deliciosa.

The general quality of Bananas has been very high, there being few cases refused admittance by the Department of Agriculture in this State. There has been some trouble with the Pineapples, caused by water blister, due to the excessive rains recently experienced in Queensland. Only a small consignmnt of citrus came to hand, but as it was new season's fruit, it is likely to receive fair demand. It is expected that the supplies of citrus will increase as the season proceeds.

The Monsteras, which are practically new to Melbourne, are relished by Queenslanders, as it is stated they are in themselves a fruit salad, combining all fruit flavors.—C. G. Parnell, Melbourne representative, Queensland Committee of Direction.

NOTES ON THE RETAIL TRADE.

There is not much improvement in trade, now that Peaches are off the market and Pears of very moderate quality, the sale of Apples and Grapes is improving, weather conditions being against the sale of Tomatoes, it would be to the growers' interest to market nothing but the best, as there is practically no sauce being made by householders this year. Some fine samples of Passionfruit are being marketed, and prices are on the decline. Vegetables are still plentiful, and cauliflowers are making their appearance and promise to be very plentiful again. —Edw. W. Thompson, Secretary Retail Fruiterers' Association.

VISIT TO SHEPPARTON.

The Minister for Agriculture (Mr. Slater), and the Assistant Minister (Mr. Pollard) visited Shepparton recently and were agreeably surprised at the progress made in that district. The cannery and orchards were inspected, and much first-hand information obtained.

Mr. Slater was told that the output of the container-making machinery last year was 25,000,000 tins, and as a result of Government assistance, the whole of this season's Peach crop would be processed.

GRUBS ATTACKING PEACHES.

A NEW PROBLEM has arisen in the Goulburn Valley through Peaches being attacked by caterpillars. This is not the codlin moth, as some supposed, but is known as the Oriental Peach moth.

It is practically impossible to spray with arsenate of lead to control this pest. Experiments are being made with bait traps, now so successfully used as an aid in codlin moth control.

Mr. D. Harvey, orchard implement maker, of Box Hill, Victoria, just returned from Tasmania. He visited all along Huon, also the Devonport and Spreyton districts. Mr. Harvey reports that the Apple crop is a substantial one in Tasmania, and that the quality is very good. He advises having secured excellent business with his patent fruit grader.

He: "The closer a man gets to Nature the happier he is."

She: "That's not what you said when you slipped on the Banana peel yesterday."

Western Australia.

CITRUS CROPS IN WESTERN AUSTRALIA.

The estimate of the citrus crop for the coming season in Western Australia, is given on March 20 by Mr. Geo. W. Wickens, Superintendent of Horticulture, as follows:—

	Bushels.
Oranges	210,000
Mandarins	13,000
Lemons	58,000

W.A. GROWS BANANAS.

Western Australia is making a serious attempt to supply the Perth market with Bananas grown within the State. A trial shipment of Bananas from Carnarvon in the north-west, recently arrived at Perth. Should the locally-grown Banana receive a favorable reception, extensive plantings will begin.

FRUIT FLY IN W.A.

An important report on fruit fly control was recently made by Mr. L. J. Newman, entomologist, W.A. Department of Agriculture. The preparation of "Clensel" is most favorably spoken of. In the experimental luring tests, which commenced on May 1, and are still being continued, some 2,128 fruit flies were captured in ten days between May 1 and August 28. The capturing of one pair of fruit flies in the winter and spring is worth a thousand pairs in the active breeding period (November to April).

Victoria.

RED HILL SHOW.

THE RED HILL SHOW, on March 25, was a very successful event. Apples were the principal fruit shown; there were also excellent exhibits of many other kinds of fruits grown in this fertile district. Flowers, vegetables, bottled fruits and children's work assisted to make a creditable show.

Edwards Bros., of Red Hill, who competed in many sections, were successful in winning the prize for the champion case of Jonathans packed for export. The prize included the Dan Wuille-Mumford cup. The fruit was of super quality and favorably commented on by the judge. Mr. E. Andrew was second, while the entry of G. Laurissen was highly commended.

Very choice fruit was displayed in the competition for the best three cases distinct varieties of Apples wrapped, packed and nailed down for export: this carries the handsome White Service cup. Edwards Bros. were first, with 93 points out of a possible 100. The varieties were Jonathan, Rome Beauty and Rokewood; K. Cleine came second with 88 points, his varieties being Jonathan, Rokewood and Statesman.

In the tray classes some excellent Apples and Pears were shown. Mr. K. Cleine had the champion tray of dessert Apples (Jon.); other winners were: tray Reinnettes (J. R. Roberts), Esopus (J. Holmes), Alfriston (E. Cauldwell), Jonathan (W. Blakeley), London Pippin (N. Prosser), tray Packham's Pears (N. Prosser, who was successful in winning several other prizes). Mr. G. Clarke had the best "flat" case of Apples packed for local market. Some nice fruit was shown in the dish and plate sections.

In opening the show, the Hon. W. Tyner, M.L.C., urged the extension of kerb markets along the lines of the open markets in European cities.

Hon. A. E. Chandler, M.L.C., stated he had opposed the Marketing Bill because its provisions would have been very harmful to the fruit industry. The Victoria Market was the best of its kind in the world: it was there for the use of primary producers, not simply for revenue for the City Council. The regulations compelling growers to leave at 8 or 9 a.m. were oppressive.

Mr. S. M. Bruce spoke vigorously on national topics and was warmly applauded.

HASTINGS.

Under the auspices of the Victorian Fruit Marketing Association, a meeting of fruitgrowers was held on March 26, at Hastings, Mr. Watt presiding. Mr. H. G. Colombie described the successful efforts of the V.F.M.A. on behalf of growers. Mr. A. A. Hammond, senior, orchard supervisor, gave a practical and appreciated address on pest control.

Mr. H. W. Davey, Chief Orchard Supervisor, Department of Agriculture, Victoria, who has been absent from duty for some time owing to illness, has now regained his health and is resuming his duties.

N.S.W.

Easter Sydney Show.—Record entries have been received for the Royal Agricultural Society's Show, Sydney, at Easter.

Fruit shows at Batlow and Camden were very successful.

TASMANIAN ROYAL COMMISSION.

Copies Available.

The Royal Commission's report on the Tasmanian fruit industry is full of interest. The varied phases of the industry are dealt with in detail. Growers and all interested would do well to secure copies for perusal and reference.

The full report contains 115 pages of foolscap, duplicated and bound in printed cover. The cost is 7/6 post free. Copies may be obtained from Mr. L. Norman, Bursary House, Hobart. Early application is necessary, as only a limited supply is available.

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Tim Young & Co. Pty. Ltd., Western Market.
Vear, F. W., 49 William Street.
Wilson, H., Western Market.
Woolf, G., Western Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Western Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., 88 Collins Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

GREAT BRITAIN.

London:
Charles Knights Ltd.
M. Isaacs & Sons Ltd.
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Garden.
Dan Wuille & Co. Ltd.
The White Service,
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
Connelly, Shaw Ltd.
White & Son Ltd.
W. G. Gosling.
The Port of Hull, London and N.E. Railway. Rep., Burns, Philp & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
MacGeorge & Jardine.
Woodall & Co.
Liverpool Fruit Brokers.
Johnson, T. S., & Co.

Bristol and Southampton:
Bristol Fruit Brokers Ltd.

Cardiff, Belfast and Dublin:
Connelly, Shaw Ltd.

Glasgow:
Russell, Turnbull & Co.

FRANCE.

Scheiber, E., Paris.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Algemeene Vruchten. Import Maatschappy (also Cologne)
Astheimer, P. H., & Son, Fruchthof.
Heinz-Tiencken.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof. Reps., J. B. Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

HOLLAND.

Amsterdam and Rotterdam:
Algemeene Vruchten Import, Maatschappy.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.
Kobenhaons Fugtauktioner.

Market Prices News and Notes.

Great Britain.

London, Covent Garden (12/2/31).—Apples: Oregon Newtown, 11/- to 13/- case; Cal. Newtown, 10/- to 10/6; Winesap, 10/6 to 11/6; British Columbian—Newtown, 11/- to 12/-; Winesap, 10/- to 11/6. Grapefruit: Florida, 16/- to 25/-; Jamaica, 15/- to 20/-; Isle of Pines, 17/- to 22/6 per case. Oranges: Valencia, 12/- to 18/-; Denia, 12/- to 22/6; Murcia, 14/- to 25/-; Spanish Navel, 12/- to 16/-; Jaffa, long count, 15/- to 17/-; Jaffa, short count, 12/- to 14/-; Cal., 16/- to 25/-. Pears: Cal. D'Anjou, 15/- to 17/-; Cal. Winter Nelis, 13/6 to 14/6 per case.

London Fruit Exchange (auction sales February 2, 4, and 6.).—Oranges, Denia and Val., 240, 7/9 to 41/-, mostly 10/- to 13/6; 300, 7/9 to 30/-; 360, 7/9 to 24/-; 504, 8/- to 20/-; 714, 16/6 to 17/6; Jaffa, 100-120, 9/9 to 13/6, 136, 13/-; 144, 13/6 to 15/9; 150, 14/- to 15/-; 180, 14/3 to 15/-; 160-300, 13/6 to 15/9; 210-240, 14/- to 16/-. Pears: Virginian W. Nelis, ex. fancy, 10/6 to 10/9; Hood River Anjou, ex. fancy, 10/3 to 12/-; fancy, 9/3 to 10/6. Apples: Hood River Newtown, ex. fancy, 9/6 to 12/-; fancy, 8/9 to 10/6; Spitz., fancy, 9/- to 10/-; Wash. Winesap, 8/- to 10/3 per box; Ore. Newtown, special, 9/- to 9/3 box; Cal. Newtown, fancy, 9/3 to 9/6 box.

Liverpool (Fruit Exchange).—Oranges, Val., 240's, 8/6 to 16/-; 300's, 8/- to 16/-; 360's, 9/- to 12/6; 504's, 9/9 to 10/3 per half case. Jaffa Oranges, 144's-152's, 12/9 to 13/6; 180's-210's, 15/- to 15/6; 240's, 15/6; 270's, 13/9; 294's-300's, 12/9 to 13/- per box. Lemons.—Palmero and Messina, 300's, 7/6 to 12/- per case; 360's, 7/6 to 8/- per box. Apples: Newtown, 9/6 to 11/-; Winesap, 10/3 to 11/- per box.

Hull (11/2/31).—Oranges: Val., 240, 9/6 to 10/3; 300, 9/6 to 11/-; 360, 9/9 to 11/6; 504, 9/9 to 11/-; Jaffa, 140-150, 12/9 to 13/6; 180, 14/6 to 15/-; 210-240, 15/- to 15/6. Apples: Winesap, ex. fancy, 10/6 to 11/-; fancy, 10/- to 10/6; Newtown, 11/- to 11/6 per box.

Manchester (12/2/31).—Apples: American Ore. Newtown, 12/- to 14/6; Cal. Newtown, 11/- to 12/-; Winesap, 11/6 to 12/6 case; British Columbian Newtown, 11/- to 12/6; Winesap, 10/6 to 12/- case. Oranges: Val. 300's, 12/- to 18/-; 360's, 11/- to 15/-; 504's, 12/6; Denia, 12/- to 24/-; Murcia, 13/- to 25/-; Spanish Navel, 15/- to 17/-; Jaffa, 14/- to 16/-; Cal., 18/- to 26/- per case; Seville, 240's, 18/6 to 20/- per case. Pears: Cal. W.N., 13/- to 13/6 per case.

Glasgow (12/2/31).—Peaches: 24's and 21's, 6/6 to 7/6; 28's, 6/- to 6/6 box. Pears.—Bon Chretien, 3/6 to 4/6 box. Apples: Winesap, 11/6 to 12/6; Newtown, 11/6.

12/6 and 13/6; Del., 13/6 to 14/6 case. Oranges: Val. 300's, 8/6 to 9/6; 360's, 8/- to 9/-; 504's, 8/6 to 9/6; Murcia, 240's, 11/6 to 12/6; 300's, 12/- to 14/- box. Lemons, 14/- to 15/- case. Pears: Cal. W. Nelis, 16/- to 17/- box.

Germany.

Hamburg (13/2/31).—Messrs. Ph. Astheimer & Sohn, Hamburg, report prices for American Apples as follows:—Basket Apples (bushel), Wash. Winesaps, ex. f., 11/9 to 12/9; fancy, 11/3 to 12/-; C. grade, 10/3 to 11/3; Romes, ex. f., 11/9 to 12/9; Jon., ex. f., 13/3 to 14/6; fancy, 13/- to 13/6; Oregon Ortleys, ex. f., 12/6 to 14/6; fancy, 12/3 to 13/-; C grade, 12/- to 12/3. Boxed Pears, Anjou, ex. f., 90-180, 12/- to 14/6; fancy, 9/3 to 13/3; Bosc, ex. f., 80-180, 10/6 to 13/-.

New South Wales.

Sydney (23/3/31).—The market representative of the Fruitgrowers' Federation of N.S.W. reports prices as follows (for average quality fruit in sound condition):—

Apples.—Dessert, 5/- to 10/-; Five Crown, 4/- to 7/-; Cleos, 5/-; G.S., 6/- to 11/-. Demand steady. A feature of the week was the arrival of a larger quantity of inferior quality fruit both local and interstate, and prices of lower grades eased. Granny Smiths were in light supply, and values for special quality improved. Tasmanian shipments to arrive to-day are advised as 24,000 cases Apples and Pears.

Bananas.—9's, 21/- to 23/- per tropical case; 8's, 18/- to 20/-; 7's, 14/- to 16/-; 6's, 10/- to 12/-. Supplies lighter and values moved up a little. Demand fair.

Grapes.—Black Muscats, 5/- to 9/- per box, some special to 12/-; M.I.A., 3/- to 6/-; Waltham Cross, 3/- to 6/-; Gordo, 4/- to 6/-; Cornichons, 5/- to 7/-.

Lemons.—Coast, 5/- to 10/- per bushel; M.I.A., 7/- to 12/-; cured, 8/- to 14/-. Coastal Lemons not keeping well. Firm enquiry for good cured Lemons.

Oranges.—Val., 6/- to 12/- per bushel, few special to 16/-; 2nd crop, green, 3/- to 5/-; 2nd crop, colored, 5/- to 8/-. Good demand for main crop of counts 125 to 200. A fair proportion of the mains now being marketed have been too long on the trees and will not keep. Second crops also, since the rain, are arriving in very bad order. Only colored fruit is wanted, and green seconds are almost unsaleable.

Passion Fruit.—Local, 5/- to 12/- per box, few special to 16/-; Vict., 14/- to 19/- per bushel. Demand weak.

Peaches.—Local, 3/- to 6/- per box; M.I.A., 3/- to 5/-; Vict., 4/- to 7/- per bushel. Supplies light. Demand fair.

Pears.—W.B.C., 6/- to 10/- per bushel; Packham, 5/- to 9/-; B. Bosc, 5/- to 7/-; B.D. Caps, 4/- to 7/-. Demand firm for choice fruit. Inferior lines harder to move. Persimmons, 1/- to 4/- per box. Weak enquiry. Pineapples, 6/- to 10/- per Pineapple case. Demand affected by water blister. Plums, 2/- to 5/- per box, some to 6/-. Supplies very light, and choice fruit moved out freely. Quinces, 4/- to 6/- per bushel, special to 8/-. Quiet demand, but quality lines sold well. Rock Melons, Cantelopes, 10/- to 12/- per Melon case, few to 14/-; Cal. Creme, 12/- to 14/-; Honey Dew, 7/- to 10/-. Demand better, and with lighter supplies values moved up. Tomatoes, local, 2/- to 4/- per box, few to 5/-; Queensland, 2/- to 4/-; Vict., 6/- to 9/- bushel. Indications are that if conditions improve the market will recover.

General.—Trading during the week was steady and the market for most varieties showed little change. Apples sold well, choice lines moving freely, and Pears were, if anything, a little firmer. Good Oranges were wanted, but inferior fruit was very difficult to move at low values.

Holidays.—The market will be closed on Good Friday and Easter Monday, and open on Easter Saturday (4/3/31).—P. S. Macdermott.

West Australia.

Perth (20/3/31).—Dunn's, flats 3/- to 5/-, dumps 3/- to 7/6; Cleo., flats 3/- to 5/6, dumps 3/- to 7/-; Jon., flats 3/- to 5/-, dumps 3/- to 8/-; Plums, flats 6/- to 10/-; Pears, Bartletts, flats 5/6 to 7/6, dumps 6/- to 8/-; Oranges, flats 8/- to 10/-, dumps 9/- to 12/-; Lemons, flats 3/- to 6/6; Peaches, flats 6/- to 10/-, dumps 4/- to 12/-; Grapes, white, open, flats 3/- to 7/-, colored 3/- to 6/6; Nectarines, flats 9/- to 13/-; Passion Fruit, flats 6/-; Tomatoes, best flats 4/- to 8/-, others from 2/6.

Queensland.

Brisbane (27/3/31).—Custard Apples, 3/- to 5/- case; Persimmons, local, 3/- to 5/- case; Jons., 5/- to 10/- case; G. Smith, 6/- to 8/-; Munros, 5/- to 6/-; J. Sharp, 6/- per case; Demo., 5/- to 9/-; Stanthorpe Peaches, slipstones, 4/- to 6/- case; clingstone, 3/- to 4/6 case; Grapes, Muscatells, 3/- to 8/- case; Ascots, 3/- to 4/-; Black Prince, 3/- to 4/-; G.G., 3/6 to 6/-; Waltham Cross, 7/- to 9/-; White Syrian, 3/- to 3/6; local Papaws, 2/- to 4/- per case; Passion Fruit, 6/- to 14/-; Lemons, local, 4/- to 7/-; Quinces, 4/- to 6/6 per case; Byrnestown Lemons, 16/- to 18/- per bush. case; smooth-leaf Pines, 3/- to 7/- per case.

New Zealand.

Dunedin (19/3/31).—Central Produce Mart reports prices as follows:—Grapes, Australian, Muscatels, Walthams, Cornichons, 7d. lb., local 9d. to 1/1 lb.; Peaches, 3/- to 5/6 case; Plums, 2/6 to 5/-; Greengages, 4/6 to 6/6; Apricots, 4/- to 6/- case; Satsuma Plums, 5/- to 6/6; Nectarines, 2/6 to 4/-; Raspberries, buckets 8/6; Blackberries, 8/- to 10/-; Apples, Grav., choice 6/- to 8/-, small 4/- to 5/-, cookers 6/- to 7/-; Del., 8/- to 10/-; Cox's, choice 10/-, small 6/- to 7/-; Worcester Pearmains, 5/- to 6/6; W.B.C. Pears, 7/- to 8/-; Californian Navels, 32/6; Mission Lemons, 37/6; Grapefruit, 34/6; Passions, 8d. dozen; Pines, 20/-; Bananas, choice, ripe, 27/6.

FRUIT TREES

ONE GROWER SAYS—

"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

Phenomenal Increase From 1 to 8 Eggs a day By Using KARSWOOD

Sometimes the evidence for or against a prisoner is so strong that a jury gives its verdict without retiring. If 12 good men and true were asked to give a verdict on Karswood Poultry Spice after hearing the evidence of Mrs. Macdonald's letter below, what do you think they would say?

There should be only one verdict. They should sentence Karswood to be used in every backyard run and poultry farm in the land. Not a short sentence either—but a continuous one! They may not all obtain increases of 700 per cent., like Mrs. Macdonald, but they would all obtain increases of at least one extra egg per hen per week, which would make the use of Karswood extremely profitable.

"From 1 Egg a Day to 8 Eggs a Day."

Dear Sir,—I have much pleasure in informing you that I was only getting about one or two eggs a day from eight hens, but, since using Karswood Poultry Spice, I have been getting eight eggs per day and the chickens and ducks are growing wonderfully. I will recommend it to anyone.

(Sgd.) MRS. MACDONALD,
23/10/29 Euccrabendinni E., Bowraville, N.S.W.

"Always Have Eggs—Winter and Summer."

I would like to let you know what results I have obtained from your Karswood Poultry Spice. I first gave it to 9 Black Orpington pullets six months old; they were laying about 5 or 6 eggs per day but after a fortnight of Karswood Spice I got 7, 8 and 9 eggs per day and they kept the same up for the winter months. I now give it to all my fowls with the result I always have eggs winter and summer, and again my fowls always look healthy. Different travellers who have called at my place say they have never seen fowls in all their travels that looked as healthy as mine. Again thanking you for your great help. I might say you can use this as you like.

(Sgd.) GEO. McDERMOTT.
6/6/29 Amphitheatre, Victoria.

NOTE THE ECONOMY.
1/- packet supplies 20 hens for 16 days.
2/- packet supplies 20 hens for 32 days.
13/- (7 lb.) tin supplies 140 hens for 32 days.

SUPPLIES:
Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½lb. packet, 1/-; 1lb. packet, 2/-; 7lb. tin, 13/-; 14lb. tin, 25/-; 28lb. tin, 48/-.

KARSWOOD
POULTRY SPICE
INCREASES EGG-PRODUCTION WITHOUT FORCING

APPLE STORAGE RECORD.

"Tasma" (Syn. Democrat).

(By P. H. Thomas, Tasmanian Govt. Chief Horticulturist.)

NOW that the question of fruit storage and storage diseases is receiving so much consideration, it is rather interesting to record a trial carried out at Hobart by a grower—Mr. E. Ross, of Cambridge, Southern Tasmania.

A case of the Tasmanian seedling Apple "Tasma" (syn. Democrat), 2½ in. size, was placed in cold store at Hobart on May 14, 1928. By May, 1929, practically no change had taken place as far as outward appearances could be judged. In May, 1930, at the Australasian Fruit Exhibition held at Hobart, a tray of these Apples was exhibited on the Department of Agriculture stand, which was featuring the commercial Tasmanian-raised varieties (Crofton, Pearmain, Tasman's Pride, Duke of Clarence, Geeveston Fanny, etc.). The fruit at this time was still firm, free from shrivelling, sweet, and showing little sign of its 24 months' storage life.

The Apples were returned to the cool store after the expiration of the show (three days), and at the Royal Hobart Agricultural Show (October 21, 22, and 23), a tray was exhibited containing fruit still firm, attractive, and palatable, the remaining sample will be retained for a further period.

The trees from which these Tasmas came are in full bearing, growing on a heavy clay, and are subject to an average rainfall of about 20 ins. The variety "Tasma" is a vigorous grower and prolific bearer, the fruit produced being dark red and hard. It is mainly used for culinary purposes during the autumn, but in the winter and summer is a good quality dessert and a first favorite on the mainland markets. With the increased plantings of the variety, it is likely that larger quantities will find their way on to the overseas market.

It is not intended at this juncture to claim a world's record for the storage life of an Apple, but it would be interesting, nevertheless, to find out if any of your readers can call to mind instances where Apples have been retained for longer than two and a-half years and still present an attractive appearance and characteristic flavor.

NOXIOUS WEEDS.

How a Botanist Serves His District.

Among the many stories lately recalled of the late Mr. H. B. Williamson, one might well serve as a suggestion to others who have similar opportunities. In one district where he taught, he noticed the appearance on the roadsides of a noxious weed not previously known in the district. The weed was shown to the children, and the danger of its increase explained.

Before very long every child in the school knew that plant by sight, and was trained to stop and pull it up wherever it was noticed. Before the botanist-teacher left the district the dangerous weed had been completely exterminated in that place.

Among the memories we have of a great botanist this should not be forgotten. Individually and co-operatively we could do much by keeping our eyes open for new weeds on the roadsides, where they are often left by passing stock, and with noxious weeds it is especially true that to-day's visitor may be to-morrow's bane.

Breeding for Egg Production.

NO subject pertaining to the poultry industry has received so much universal attention in the past fifteen years as that of breeding for increased egg production, writes "Wingbow," in the "South African Poultry Magazine." Starting with no more definite clue to the solving of the problem than that presented by the phrase "like begets like," both breeders and scientists have proved the fact that not only the different degrees of productiveness are transmissible and inherited, but that the capacity of increased egg production can be developed year by year, and high records may be made for which no precedents exist in the known history of the strain.

The first step in selecting breeding stock should be to establish a flock of pedigree or record hens and males. In doing this careful attention must be given to obtaining good laying, vigorous birds, in good health and of standard size for the breed. The selection for high egg production should be as recorded by the trap-nest or single pens.

It is not necessary that the flock of the commercial egg farmer should be all of exhibition quality, but it is unwise to concentrate on egg production to the exclusion of everything else. Increased egg production can be obtained in this way, but the stock will be of inferior quality and of no value for breeding. In the long run the owner will find that for the sake of a little more rapid improvement in average egg production he has been sacrificing his opportunity for producing good quality breeding stock and eggs for hatching which, if from a good strain, are always saleable at good prices.

For breeding stock the preference should be given to hens, rather than pullets, for various good reasons. Only those who use birds that have gone through at least one laying year can be reasonably certain that they have in their breeding pens nothing but high record individuals. There are occasions when it is necessary to save time, in which case the pullets are bred from while they are being trap-nested; but at the end of the laying period the progeny of the birds which put up poor records or are otherwise unsatisfactory must be discarded from the pedigree lines.

One or two-year-old hens, if they have been properly handled, are more likely to transmit their good qualities to their off-spring than are pullets. In this connection it is worth while to keep in mind the belief of many experienced breeders that the exhaustion of pullets after months of heavy laying is not inevitable, but is the result of improper handling and management. When the birds are properly fed and kept up in weight and condition, it is believed that not only can good hatches be secured from their eggs, but that they are capable of transmitting vitality to their off-spring.

A point that should receive some consideration is the quality of eggs such as size, shape, color, etc. In many instances the eggs laid by high record hens are inferior in size, and it requires some strength of character to discard a bird from the breeding pen that may have the best record in the flock because her eggs are small; the overlooking of this fact will probably, however, in a very short time bring about marked deterioration in the strain. No matter what method of breeding is followed all eggs set should be carefully selected.

ABOUT DUCKS.

Questions:

"White Duck" (Sale) writes:—

1. Are white Muscovy ducks pure-bred if they have black feathers on head?
2. Where can I get a book on ducks?
3. What age should Khaki Campbells, Indian Runners and Pekin ducks start laying?
4. What is a good ration for feeding laying ducks?
5. What breed of ducks have the Khaki Campbell and Indian Runner got in them, and where did they come from first of all?

Answers:

1. Yes, the general color of the Muscovy duck is pied black and white, and it is not uncommon for a duck to have black on its head. Whole white, whole black and blue dun colors are also found in Muscovies.
2. I would suggest that you get in touch with Donohoe & Thompson, of 367 Post Office-place, who would no doubt be able to supply you with a good book on the subject.
3. Indian Runner and Khaki Campbell ducks may start laying at from 4 to 5 months, but Pekins, which are table ducks and not so prolific, will probably not commence laying for a month later.
4. A well-balanced mash for laying ducks could be made up as follows:—1 lb. bran, 2 lbs. pollard, 1 lb. maize meal, ½ lb. ground oats, to which is added about 8 per cent. of meat and bone meal. Mr. Bertelsmeier, the prominent S.A. duck breeder, has recommended as a morning mash:—2 parts pollard, 1 part bran, 30 per cent. chaffed greenstuff. To this add, for every 50 ducks, one condensed milk tin of fairly fine sand carrying a fair amount of lime. Mix all in a dry state and add water warm enough to take the chill off for feeding on the cold mornings, and in warm weather use cold water. Add a little meat meal to the mash each morning.

FEEDING QUANTITIES.

Question:

"New Chum" (Buninyong) writes:—

What would you consider a standard quantity of food for, say, 10 fowls (Black Orps. and White Leghorns)?

Answer:

It is impossible to state definitely any fixed amount of food to be given to poultry, as this will vary with the methods under which the fowls are kept and whether they are in laying condition or require to be fattened for table purposes.

As a basis, however, for laying birds, it is usual to allow about 2½ ozs. of grain (by weight) per bird per day, and about 2 ozs. meal products, such as mixed meal, bran, pollard, etc. It is presumed that the mash is given in the mornings and the grain at night with a good supply of green stuff in addition at midday.

The man who does not advertise is like the man in the dark without a lantern.

HE knows where he is,
BUT nobody else does.

Tasmania.

Hobart (28/3/31).—C.O.P., 3/- to 5/6; N.Y.P., 3/- to 4/6; Jon., 3/6 to 5/6; D.C., 2/6 to 3/-; Alfristons, 2/6 to 3/3; St. Lawrence, 2/6 to 4/-; L.S., 3/6 to 5/6; W.P.M., 2/6 to 4/-; P.A., 2/- to 3/-. Pears: G.B., 2/6 to 4/6; B.B., 2/6 to 4/6; F.B., 1/6 to 2/-; B.D.C., 1/- to 2/-; N.P., 1/6 to 2/6; W.B.C., 2/6 to 4/-; inferior grades, 9d. to 1/6 case. Tomatoes, best lots, 3/- to 5/6; Quinces, 3/- to 4/6 case; Peaches, 3/- to 4/6 half-case.

South Australia.

Adelaide (27/3/31).—Apples (eating), 6/- case; do., cooking, 5/-; Figs, 6/- to 8/-; Grapes (dark), 6/-; do. (white), 6/-; Lemons, 10/- to 12/- case; Nectarines, 12/- to 14/- case; Oranges (common), 6/- to 8/- case; do. (navel), 10/- case; Peaches, 6/- to 8/-; Pears (green), 5/- to 6/-; do. (ripe), 7/- to 8/-; Plums, 4/- to 6/-; Quinces, 3/- to 4/- case.

Victoria.

Melbourne (28/3/31).—The following prices are supplied by the Wholesale Fruit Merchants' Association of Victoria:—Apples, eating, small demand, 4/- to 6/-; cooking, 3/- to 5/-. Bananas, Queensland, green in double cases, 9's and 8's, 19/- to 20/-, some 21/-; 7's, 15/- to 18/-; 6's, 12/- to 14/-. Selected lines for country trade higher. Rust-affected lines lower. Grapes, 4/- to 7/-; demand still poor, stocks not cleared. Lemons, 7/- to 10/- a case, few special higher. Oranges, Val., 5/- to 9/-, few specials higher. Passion Fruit, 6/- to 9/-, few special 10/-. Pears, 5/- to 6/-, demand limited. Peaches, 1/6 to 4/-. Pineapples, 8/- to 11/-, some 12/- double case. Tomatoes, bulk, 1/6 to 4/-; Few special lines, 5/- to 6/-.

The Melbourne manager of the Federal Citrus Council of Australia reports that sales were as follow:—Lemons, standard, 180-248, 9/- to 13/-; a few specials higher; small, marked or large, 6/- to 8/-. Valencias, average standard grade, 5/- to 8/-, according to count; with odd sales to 9/- and 10/-; a few selected lines higher.

RETAIL FRUITERERS' ASSOCIATION.

The monthly meeting of the Melbourne & Metropolitan Retail Fruiterer's Association was held in the Temperance Hall, Melbourne, on March 5, there was a large attendance.

Mr. McColl, honorary secretary of the Growers' Provincial Society, Scoresby, addressed the meeting on a proposal of that body to regulate marketing hours and parking conditions at the Victoria Market, and after several questions had been answered by the speaker, a vote of thanks was passed to him, and the matter alowed to stand over until a future meeting for consideration.

The Secretary reported he was taking action along with the other allied trades to have the Wages Board called together, with a view to considering a reduction of wages in the trade.

It was also announced that the Federal Taxation Department had lost the test case against the Hardware Club in reference to the claim of 4d. per head under the amusement tax for the last picnic of that organisation. The latter part of the meeting was taken up over matters in connection with the annual picnic.

RETAIL FRUITERERS' PICNIC.

The annual picnic of the Melbourne & Metropolitan Fruiterers' Association was held at Sorrento on Wednesday, March 11, and proved one of the most successful ever held. The weather being perfect added greatly to the pleasure of over 1,000 persons who made the journey, and 100 persons partook of the official luncheon which was held at the Sorrento Hotel. The return journey was begun at 5 p.m., and with an efficient band on board, community singing was greatly appreciated. Port Melbourne was reached at 7.45, and so ended a very pleasant day's outing.

L. P. Rosen & Son, Fernhill Nurseries

Are now booking orders for all kinds of Fruit Trees, including Citrus, of which 100,000 are available, including some 15,000 Valencias and 5,000 Washingtons, grown from buds supplied by the Bud Selection Society.

Catalogues and Quotations Free on Application.

SPECIALTIES—FRUIT TREES, ROSE PLANTS, and KUNDE SECATEURS, Etc.

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We are the largest Buyers in Australasia

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MELBOURNE.

"Fruit World Annual"

Comprehensive review of Australian and New Zealand fruit industry.

"The Fruit World," Box 1944
G.P.O., Melbourne.

A New Virus Disease of Bananas.

C. J. Magee, M.Sc., B.Sc.Agr., Assistant Biologist, in "N.S.W. Agricultural Gazette."

DURING MAY OF LAST YEAR the attention of the N.S.W. Department of Agriculture was drawn to an apparently new disease affecting Banana plantations at Tuntable Falls, Nimbin. The disease was at first considered to be due to local soil and climatic conditions, but the persistence of the trouble and its appearance in fresh plantings led to the belief that it was of a much more serious nature, and its investigation was undertaken.

Symptoms.

The disease takes the form of a severe yellowing and mottling of the younger foliage, followed by a rotting of the heart-leaf and central portion of the psuedo-stem. The "heart-rot" stage of the disease apparently occurs only during the winter months, but the yellowing and mottling may persist throughout the year. In young plants the disease first appears as whitish or yellowish-white streaks, which may extend from the mid-rib to the margin of the most central leaves. These chlorotic areas may vary from narrow streaks to bands half an inch or more in width. In some leaves the streaks are not continuous, giving rise to a mottled appearance of yellow and green areas. During the summer infected plants continue to produce this mottled type of foliage, but with the advent of cooler weather many of the plants commence to rot at the heart-leaf, the rotting extending down into the corms and finally killing the plants.

Cause.

Preliminary experiments carried out by the writer during the present year have shown that the disease is infectious, and may be transmitted from diseased to healthy plants by means of the Banana aphid (Pentalonia nigronervosa)—the insect which is already well known to Banana growers on account of the part it plays in spreading "bunchy top." Evidence suggests the disease is an infectious chlorosis or mosaic belonging to the virus disease group.

At present the disease is confined to only a few plantations in one locality, but in one plantation at least it has caused serious losses.

Banana growers are advised to be on the lookout for this disease, and any plants which arouse their suspicions should be immediately reported to the Banana Inspector in their zone.

This disease is distinct from "bunchy top," but it is conceivable that were it to become widespread it would be an equal or more serious menace to the Banana-growing industry. The disease is still under investigation.—("Agricultural Gazette of N.S.W.")

The advantages of Manchester as a port are given in the advertisement in this issue by Capt. W. J. Wade, 8 Bridge-street, Sydney, N.S.W. Attention is directed to his advertisement.

"Elephant" Brand Arsenate of Lead, lime sulphur, red oil, white oil emulsion, Bordeaux powder and nicotine sulphate is being advertised in this issue by Messrs. Jaques Pty. Ltd., Madden-grove, Burnley, Vic. "Elephant" Brand Sprays are reliable, efficient and of guaranteed quality.

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(6) Shipments should be made to T. S. Johnson & Co., because they give you the choice of the three ports and their efficient Selling Organisations which are established therein.

(7) T. S. Johnson & Co.'s regular circle of buyers and wide distributing channels enables them to secure highest prices.

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Cooper's Arsinette is being advertised in this issue by Messrs. William Cooper & Nephews (Aust.) Ltd., 4 O'Connell-street, Sydney. The manufacturers state that the superiority of Arsinette lies in its extraordinary fineness, its even covering power and its tenacious sticking quality.

The Westralian Farmers Ltd., Perth, West Australia, are the proprietors of the well-known Black Swan brand of fresh fruits. This firm has supplies of growers, packing shed and orchard requirements always on hand.

The well-known firm of C. J. Goodman, Picnic Point Nurseries, Bairnsdale, Victoria, are offering in their advertisement, reliable fruit trees, including:—Apricots, Apples, Peaches, Plums, Cherries, Pears, Quinces and Oranges, also Walnuts, Almonds, etc.

Mr. F. H. G. Rogers, commission agent and fruit salesman, Fruit Exchange, Sydney, announces in his advertisement that he has been selling fruit on the Sydney market for the past thirty years, and assures growers of highest prices, prompt returns and efficient service.

Messrs. Ridley & Houlding, Coven Garden Market, London, England, who are importers of Apples, Pears and Oranges from Australia and New Zealand, have been connected with this trade for over twenty years. Attention is directed to their advertisement in this issue.

M. ASVARISCH

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18 x 24	£4 5 6	18 x 24	£5 12 0
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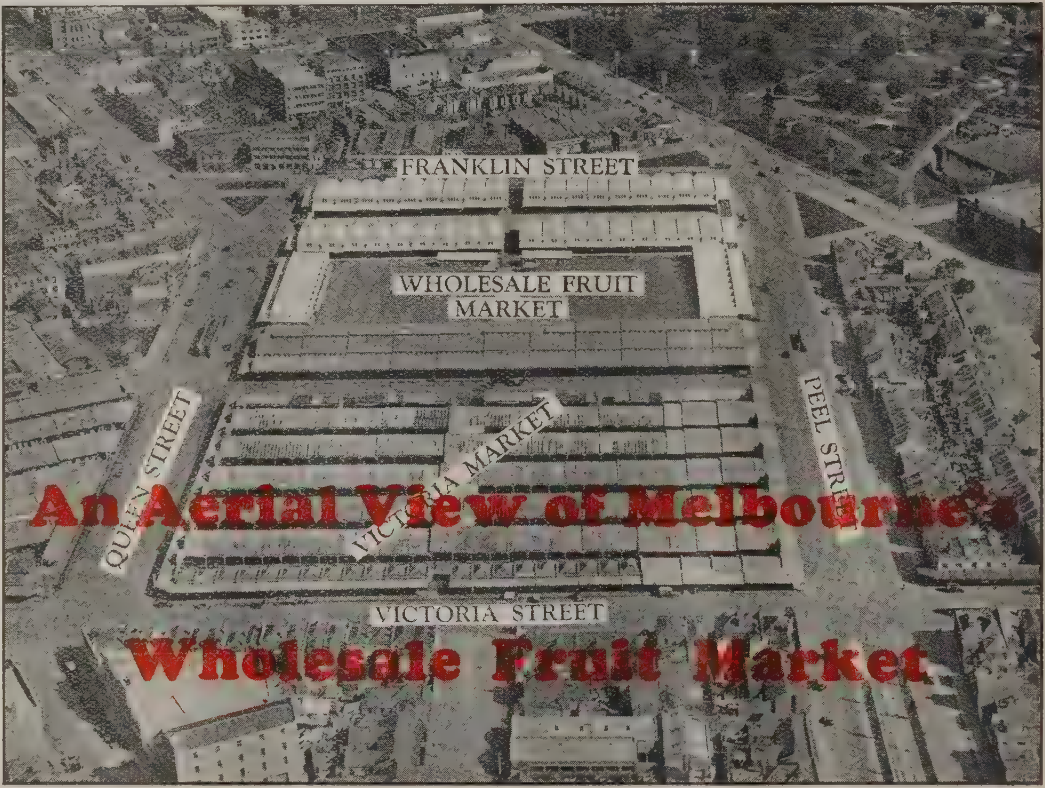

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AUTHORISED BY THE AUSTRALIAN MONTHLY NEWSPAPERS ASSOCIATION

AMNA-5

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For this Season Use Only "ELEPHANT" Brand

Spray Now with

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COOL STORES' CONFERENCE.

Blackburn, May 26.

The Annual Conference of the Fruitgrowers' Cool Stores' Association of Victoria will be held at Blackburn on May 26, under the chairmanship of Mr. A. E. Hocking.

There are many important items set down for discussion on the agenda paper. In addition, there will be a series of addresses on topics of great interest and importance to fruitgrowers. These subjects include spraying, pruning, manuring, soil analysis, the relative advantages in cool stores of the dry air and direct expansion systems, the value of fruit as a food, propaganda to increase fruit consumption, the relative costs of running cool stores, crude oil or electricity.

It is expected that the speakers will include Mr. G. B. Tindale, B.Agr.Sc., Mr. J. Gibson (Fruit and Health), Mr. C. Werner, and others. Growers are invited to take part in the discussions. A large attendance is expected, and all fruitgrowers are welcome to attend. The Secretary is Mr. J. G. Aird, Ringwood.

CORRECTION.

In the April issue of the "Fruit World" an article appeared under the heading of Tyabb. This was an error, and should have been under the heading of Somerville, as the subject matter had reference to the Somerville Cool Stores.

Editorial Chats

The Sugar Agreement.

FOLLOWING THE PRESENTATION of the majority and minority reports by members of the Sugar Enquiry Committee, the Federal Government has acted promptly in drafting the terms on which the sugar agreement is to be renewed. A summary of the terms of the new sugar agreement is published in this issue.

* * * * *

The reports from the Sugar Enquiry Committee were noted with mixed feelings by the fruit industry. Some growers advocated the adoption of the majority report, others favored the minority report, and particularly stressed the necessity for the steady reduction of the sugar areas in order to do away with the unprofitable export business.

Others again condemned both reports and claimed that there was no justification for the sugar industry to be singled out for preferential treatment. They said it was the sugar agreement made by the Hughes Government awarding £30/6/8 per ton (after the Royal Commission had recommended £22 per ton), which caused the overplanting and consequent losses on export.

Now the present agreement aims at keeping production up to its high level, thus perpetuating the evil of over-production under "hothouse" conditions.

* * * * *

The minority report advocated a reduction in the price of sugar to the public, and special concessions for the fruit industry. Their first recommendation was that the industry take definite steps to reduce the unprofitable surplus production.

* * * * *

In renewing the agreement the Federal Government has provided for the principle of preference to unionists in the industries directly benefiting under the agreement. This clause is definitely opposed by the fruit industry and expressions of regret are heard on every side.

* * * * *

Under the new agreement a sum of £315,000 is to be provided by the sugar industry as an aid to the fruit industry. This sum will be administered by a special committee on which all interests will be represented. This sum is a substantial one—being over £100,000 more than previous concessions—and will be used to develop the export trade in canned fruits and to assist the local trade in jams, etc. The concession is to be payable to manufacturers who pay a defined price to growers for the fruit.

* * * * *

Summed up, the new sugar agreement has been made, and the burden must be carried by an overtaxed public.

The concessions for the fruit industry are appreciated, and will be of service.

* * * * *

Thanks are due to Mr. W. Young, who worked night and day to keep the needs of the fruit industry before the Sugar Enquiry Committee. Mr. Young was absent from his orchard during the busy picking and packing season, and all will accord him the appreciation and thanks which are his due. He did not spare himself in his efforts to secure every possible concession for the fruit industry.

* * * * *

Regarding the sugar agreement—one well-known grower puts it this way: While the "good Australian" policy exists for subsidising industries—(secondary as well as primary)—the fruitgrower must "hop in for his cut."

He added that in principle, he was opposed to this "good Australian" policy, but "everybody's doing it, why not us?"

* * * * *

Thus we have the spectacle of the well-organised sugar industry, amply financed, wielding its power politically and imposing its will on the people.

* * * * *

Some day Australia will become a self-reliant nation. But when?

AUSTRALIAN APPLE AND PEAR EXPORT.

STEADY PROGRESS has been made in the organising of the Australian Apple and Pear Export Council. The following States have now affiliated:—Tasmania, Victoria, West Australia, South Australia and New South Wales.

The constitution was drafted and adopted by the Interstate Conference which met at Melbourne in December last. This constitution was submitted to the several States and, with minor alterations, adopted.

The conference is being called to meet in Melbourne in August next. This conference will be held in conjunction with the Department of Markets when the grading regulations will be reviewed. Various factors affecting the Australian Apple and Pear export industry will come up for consideration.

The Australian Conference of Fruitgrowers held at Hobart in May last was so successful that it was decided to hold the next conference at Brisbane in 1931. Since then, however, a new factor has entered, namely, the effective organising of the Australian Apple and Pear Export Council.

As this conference has been called to meet in Melbourne in August next, the State organisations have been consulted and there is a consensus of opinion that it would be better to postpone the projected 1931 Brisbane conference.

APPLE AND PEAR EXPORT TOTALS.

THE EXPORT of Apples and Pears from Australia up to mid-April is shown thus:—Apples, 1,930,958 cases; Pears, 271,587 cases. This information was received from the Department of Markets, the quantities from each State being as follows:—

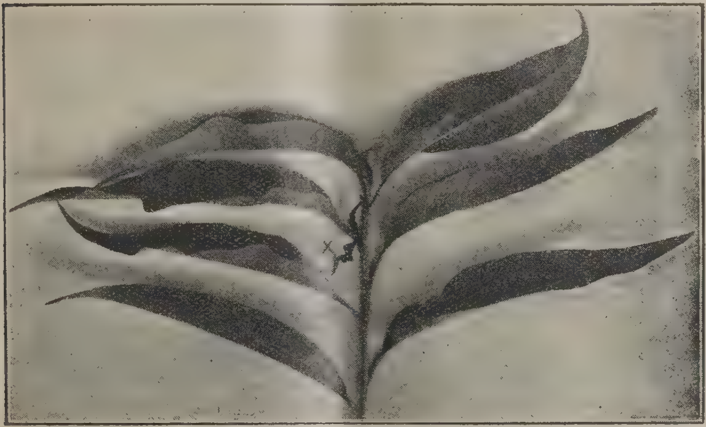
The following figures show the number of cases of Apples and Pears exported from Queensland and West Australia up to April 10, and from N.S.W., Victoria, South Australia and Tasmania up to April 18.

	Apples.	Pears.
Tasmania	1,264,320	84,568
Victoria	322,393	161,117
West Australia	271,313	13,776
New South Wales	43,322	6,528
South Australia	26,831	5,534
Queensland	2,779	64
Totals	1,930,958	271,587

The Oriental Peach Moth.

Much Damage Done in Victorian Orchards

FOR MANY YEARS, Peach growers in Victoria have suffered severe losses to their late Peaches by the ravages of a caterpillar, which, up to the present time has been popularly spoken of as the codlin moth. The insect has, however, been definitely determined as the Oriental Peach Moth (Laspeyresia molesta, Busck.)



Oriental Peach Moth—Peach twig showing typical twig injury.

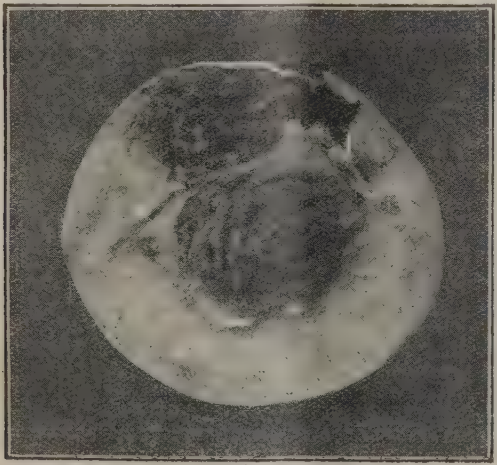
—(Illustration by courtesy "Vic. Journal of Agriculture.")

The Goulburn Valley has apparently suffered the most, the losses being estimated at 15 per cent. of the late-maturing crops.

This insect pest formed the subject of an intensive enquiry by the Victorian Department of Agriculture, Mr. R. T. M. Pescott, M.Agr.Sc., Entomologist, having conducted the enquiry: his report is published at length, and illustrated in the April issue of the "Journal of Agriculture."

Control Measures.

The peculiar feeding habits of the Oriental Peach Moth make arsenical sprays ineffective.



Peach Moth.—Injury to the interior of fruit.

The use of 40 per cent. nicotine sulphate at a strength of 1 in 400 has been shown to reduce the amount of infection on the young growing tips of the Peach tree, without absolutely controlling the pest. Mineral oils and nicotine were ineffectively tried to destroy chrysalids.

It is hoped to control the pest by parasites of the family Ichneumonidae.

VICTORIA.

News and Notes.

TOBACCO GROWING is proving a good sideline to fruitgrowing in parts of Victoria, particularly the Goulburn Valley.

A Goulburn Valley branch of the Victorian Tobacco Growers' Association has been formed, with headquarters at Shepparton. Mr. V. R. McNabb (Ardmona) was elected President and Mr. E. A. Mollard (Shepparton) Secretary.

The Victorian Fruit Council has been launched. A constitution has been drawn up and accepted by a conference representing the principal fruit associations of Victoria, deciduous, citrus, canning and dried fruits.

This constitution will be submitted to the various Associations concerned for their approval. The Chairman is Mr. A. E. Hocking, and the Acting Secretary, Mr. J. G. Aird, Ringwood.

The Sugar Agreement renewal has caused much discussion. Opinions widely differ: some growers condemn the agreement—with its embargo and "preference to unionists" clause: others accept it as being the best possible under all the circumstances.

The Export season for 1931 for fresh fruit has just about closed. Big quantities of canned and dried fruits, however, continue to go forward. Market prices for Apples and Pears are fair; by adding the exchange the prices are satisfactory to growers.

The Sugar Industry.

Agreement and Embargo Renewed for Five Years.

Present Price to Continue for 3 Years, Then Reviewed.

£315,000 for Fruit Industry.

Preference to Unionists is Part of New Agreement.

THE MAJORITY REPORT of the Sugar Enquiry Committee has been largely adopted, and the Federal Government has decided to renew the sugar agreement and embargo for five years.

The sum of £315,000 has to be provided from the sugar industry to assist the fruit industry. All industries receiving direct benefit under the sugar agreement must observe award conditions, and give preference to unionists. The following are some of the conditions regarding the continuance of the sugar agreement:—

1. The present selling prices of sugar to be continued for the first three years.

2. The fruit industry assistance plan as recommended in the majority report to operate for the first three years.

3. The selling prices and conditions of sugar and the fruit industry assistance plan to be reviewed before the end of the three years in the light of the circumstances then existing, and be so determined for the last two years of the agreement.

4. Award conditions and preference to unionists to be continued in respect of any industry receiving direct benefits under the sugar agreement.

5. An allowance of 4/9 per ton to be made on sugar sold in Hobart, to cover certain disabilities existing in that city as compared with other capital cities, provided that this allowance is passed on by the wholesale merchants to the retail grocers.

6. The present arrangements for the supply of extra sugar to Hobart purchasers under guarantee—with the view of ensuring adequate supplies against emergencies—to be continued, but if any shortage of sugar should occur in Hobart and the Commonwealth Government finds it is not due to Hobart purchasers making insufficient use of the guarantee system, the Government may call upon the Queensland Government to establish a sugar depot at Hobart.

7. Every effort to be made by the authorities concerned in Queensland and New South Wales to keep the production of sugar within the present limits, and the assignment of sugar lands and the peak year system to be rigidly administered to this end.

Production Figures.

8. In order to adjust as equitably as possible the position which would arise from any alteration in the present volume of production, sugar wages and conditions, or the value of export surplus sugar during the currency of the new agreement, the following plan will operate:—

A. An average price of £22 per ton for raw sugar will be taken as the approved basic return on an annual production of 500,000 tons or over, for the purpose of the following adjustments:—

B. For every 10,000 tons by which the total production falls below 500,000 tons per annum the basic price of £22 will be increased by 1/3 to a limit of £23 per ton for the estimated Australian requirements of 340,000 tons, this adjustment being on account of the larger overhead costs that occur when the volume of production is reduced.

C. The basic price or prices so calculated will be varied each season to the extent of any alteration in sugar wages or working hours made after March, 1931. Any such price variations will be calculated on the present wage proportion of 55 per cent. of an estimated present bare cost of £18/5/- for producing raw sugar, i.e., including depreciation, but excluding interest on capital.

D. A trust account under the joint control of the Commonwealth and Queensland Governments will be created. Each season this account will be credited on behalf of sugar consumers with the excess return on raw sugar over and above the adjusted return for the season, calculated as just described—and the account will be debited on behalf of the sugar producers with any deficiency in the actual return for raw sugar below the adjusted return so calculated. Any net surplus in the account to be invested as approved by the Commonwealth and Queensland Governments, and to be held until there is sufficient credit available to permit of an effective reduction, say, one halfpenny per lb., in the price of sugar being passed on to manufacturers and domestic consumers.

Majority and Minority Reports.

The recommendations of the majority and minority reports were traversed by the Prime Minister. Taking the unanimous reports first, he said he had to announce that the Government had approved of all the recommendations made. However, in regard to the recommendation that the wages and conditions of employment of all persons employed in any industry receiving any direct benefit as a result of the sugar agreement, namely, the sugar and fruit industries, shall be fixed by arbitration, it had been decided that the principle of preference to unionists, which now existed under the law, must be maintained. After an exhaustive review of the whole situation, which included the present urgent necessity of retaining the £2,000,000 credits in London, derived from exported sugar, the undesirability of increasing unemployment in the Far North, and of throwing probably 120,000 acres of land out of cultivation, and a realisation of the fact that practically every other primary industry into which the dispossessed sugar growers and workers might enter was also over producing and exporting its surplus at less than the Australian price, the Government had decided that in the public interest generally its sugar policy could not be based upon reduced production. The direct saving to local consumers, if over-production were completely eliminated, was not more than one halfpenny per lb.—about £1,500,000 per annum, or only 4/7 per annum per person. This extra charge provided employment for 14,000 individuals and a living for about 60,000 wives and families. But the charge was equalised by the introduction of approximately £2,000,000 per annum from the sale of surplus sugar, most of which amount found its way to the southern States for the purchase of groceries, clothing, boots, implements and a multitude of other protected commodities, thus returning indirectly to the main body of consumers, in wages and profits on the goods sold to the sugar producers, what those consumers lost directly in the price of sugar.

Cost of Production.

The immediate reduction of the farthing per lb. in the selling price of refined sugar, as recommended by the minority members of the Sugar Inquiry Committee, was based upon their finding of £18/7/- per ton as the present cost of producing raw sugar. The majority members fixed the cost of production at £22/7/9 per ton. The return on raw sugar for 1930 was £18/17/6 per ton, and was not likely to be greater for the coming season. A reduction of one farthing per lb., which was £2/6/8 per ton, would thus clearly result in a loss to sugar producers.

After analysing the two reports and the situation generally, Mr. Scullin said the Government was of the opinion that the majority figure of £22/7/9 per ton must be substantially accepted as the cost of production.

Western Australia.

Bridgetown Fruit Show.

THE 35th ANNUAL SHOW of the Bridgetown Agricultural Society was held in March. There was an excellent display of fruit and vegetables: the ring events were appreciated.

The prize list for fruit was as follows:—

Apples, packed for export, two export varieties (first prize donated by Paterson & Co.), J. A. Winn 1, W. Toyer 2, E. Abbotts 3; Pears, wrapped packed as for export, R. W. Scott 1, W. Toyer 2; Apples, in dessert condition, packed for local market, unwrapped, any variety, F. H. Pearce 1 and 2; Apples, any variety, unwrapped, H. Lake 1, A. M. Greig 2; collection four varieties export Apples, T. May 1, J. R. Walter 2; collection three varieties export Pears, R. May 1, J. R. Walter 2; Pears, six exports, one variety, W. Toyer 1 and 2; Apples, six Jonathan (2¾ in.), A. M. Greig 1, A. A. Annells 2; (2½ in.), A. M. Greig 1, F. H. Pearce 2; (2¼ in.), O. Spark & Son 1, F. H. Pearce 2; six Cleopatra (2¾ in.), E. L. Mitchell 1, A. A. Annells 2; (2½ in.), E. Abbotts 1, R. May 2; six Dunn's Seedlings (3 in.), E. Abbotts 1, H. M. Dallas 2; (2¾ in.), E. L. Mitchell 1, E. Abbotts 2; (2½ in.), E. Abbotts 1, Mrs. E. E. Hill 2; six Granny Smith (3 in.), O. Sparks & Son 1, C. Green 2; (2¾ in.), O. Sparks & Son 1, J. R. Walter 2; (2½ in.), O. Sparks & Son 1, C. Green 2; six Dougherty (2½ in.), J. J. Barnes 1, Ingram & Son 2; six Rokewood (2½ in.), J. J. Barnes 1, C. Green 2; six Yates (2½ in.), Ingram & Son 1, A. A. Annels 2; (2¼ in.), T. May 1, O. Sparks & Son 2; six Delicious, J. J. Barnes 1, Ingram & Son 2; six Rome Beauty, R. G. Evans 1, T. May 2; six Statesman or Chandler, C. Green 1, T. May 2; Apples, cooking, one variety, E. Abbotts 1, J. R. Walter 2; Apples, any other variety, O. Sparks & Son 1, Ingram & Son 2; Pears, cooking, any variety, A. Cullen 1, E. Abbotts 2; Peach, any variety, T. May 1 and 2; Plums, one variety, T. May 1, S. Stevenson 2; Quinces, one variety, E. Abbotts 1, R. May 2; Lemons, fresh, E. Abbotts 1, J. J. Barnes 2; Passion Fruit, J. J. Barnes 1, W. Toyer 2; Walnuts, G. & G. Hester 1; Almonds, E. J. Giblett 1, G. & G. Hester 2; Tomatoes, one variety, H. C. Davies 1, E. G. Giblett 2; Rock Melons, H. C. Davies 1, R. E. Warburton 2; Watermelons, R. E. Warburton 2; fruit, any other variety, H. Lake 1, R. May 2; dish of mixed dessert fruit, S. E. Dallas 1, R. G. Evans 2.

Grapes, Sultanas, W. K. Walter 1 and 2; black and red table Grapes, G. & G. Hester.—"Nelson Advocate."

Western Australia is now growing Bananas.

An eight months planted area at Carnarvon, W.A.

(Further details next issue.)

—(Illustration by courtesy "W.A. Journal of Agriculture.")

WESTERN AUSTRALIA APPRECIATED.

Mr. G. W. Peart, proprietor of the C. J. Goodman nurseries, has just returned from a visit to W.A.

Mr. Peart visited the main fruitgrowing centres, and was delighted to note the excellent crops of good quality fruit. The one exception was the Mt. Barker district, which had a severe infestation of thrips. Some particularly large crops were seen in the Bridgetown, Donnybrook and Boyup Brook areas.

Plantings of fruit trees are still going on, export varieties being specialised. As a matter of fact, things generally in Western Australia, particularly in the fruit industry, were a good deal better than Mr. Peart imagined, and he is glad to express appreciation.

The secession movement is stronger than many people in the eastern States imagine.

Gladys: "I'm going to break off with Jim. We never could be happy together."

Her Mother: "Why not? He's a nice youth."

Gladys: "But he's an infidel; he doesn't believe in eternal punishment."

Her Mother: "Marry him, child! We'll take that notion out of his head quick enough!"

Frozen Fruit—A New Industry.

Orange Juice, Apple and Cherries.

The "Quick Freezing" Process Has Made Big Strides in U.S.A.

A NEW INDUSTRY has been developed in U.S.A. in the freezing of tree-ripened fresh fruits.

In the April issue of the "Fruit World" we gave particulars of the quick-freezing process as applied to Peaches.

The theme is now continued as regards Orange juice, Apples and Cherries.

Another Industry Developed by Refrigeration.

Frozen Orange juice attaining wide popularity as food for children and adults. Company organised to dispense in form suitable for distribution to home. Made from Oranges ripened naturally. Shipments to foreign countries.

THIRTY-FIVE THOUSAND GALLONS of Orange juice distributed by one company in Chicago, and a few of its suburbs in the short space of six months, is evidence of the extent to which the people of that city are realising the value of Orange juice as a food for children and adults alike.

Because of its growth-producing vitamin "C," so necessary in certain features of body building, pure Orange juice in generous quantities is recommended as essential in the diet of children.

The health-building qualities of the Orange is contained in its juice, and extraction of the juice in sufficient quantity for family use at meals requires a number of Oranges and involves some little time and trouble. By the aid of refrigeration, the latter has been eliminated.

An Orange drink has been dispensed at stands and in stores for some time, and has resulted in an ever-increasing appreciation of the Orange as a drink as well as a food, and a constantly increasing consumption of it.

Recognising the growing demand for Orange juice in a form suitable for distribution to the home, a company was formed about a year ago in Chicago, Ill., under the title of "The Pure Orange Juice Co. of America." H. L. Racklin is president of the company, and its principal office is located in Chicago.

The Orange juice distributed by this company is prepared in the Orange groves of Florida and California, from Oranges ripened naturally in the groves. No artificial preservatives or coloring of any kind is added—it is nothing but the pure Orange juice without peel, seed or coarse pulp; these are utilised in producing by-products such as Orange extract, pectin, etc.

After the juice is extracted it is placed in six-gallon cans and frozen solid; it is then transported in refrigerated cars to a cold storage warehouse in Chicago, where it is stored preparatory to bottling, when it is returned to a liquid condition and bottled in half-pint, pint and quart bottles, similar to the type used by milk companies. A smaller sized bottle, containing a gill, is also marketed, principally for use in schools, clubs, cafes, etc.

Distribution of this product at present is confined to supplying the consumer direct, which is accomplished by motor trucks operated by the company, and in a few instances, in the suburbs, by agents.

Goldenhealth Fruit Products Co.

A new product requiring freezing, storage and transportation under refrigeration, has been successfully placed upon the markets of the world by Goldenhealth Fruit Products Co., of Long Beach, Calf. Frozen citrus fruits—Oranges, Lemons, Grapefruit—are shipped in containers to other United States cities and to foreign ports. So gratifying have been results from this method, that the Goldenhealth plant expects to more than double its capacity during the next six months.

The citrus fruits are first washed, then dried and cut in halves by machinery. After this the juice is extracted, running from the second floor of the plant into the freezing room where, at a temperature of 5 deg. F. the juices are frozen. The citrus juice is solidified in tinned metal containers holding six gallons, or in wooden barrels of 30 gallons capacity. The containers are then stored in a cold room to await shipment to destination. A temperature of 27 deg. F. will hold the frozen juices in the solid state. The barrels and cans are packed in salt and ice when trucked to train or ship.

Shipments have been sold in England, Germany and New Zealand, and other places, transported in the refrigerated holds of steamers. Several advantages are claimed for the ice method of shipping citrus juices. No sugar is needed. There is no fermentation during transportation. There is no breakdown of structure. Consequently, it is claimed, the full and original fruit flavors are immediately restored upon melting the ice down into liquid form, especially as no preservatives are used in preparation for the journey. This system is rapidly becoming a favorite with beverage dispensers in the United States and various parts of the world. The Long Beach concern looks for a vast increase in the tonnage of various juices so processed and shipped.—"Ice and Refrigeration."

[Another article in this series will appear in next month's issue.—Ed.]

CONSERVATION OF TREES.

Essential in Country Districts.

Value for Shelter and Beekeeping.

The conservation of trees formed the subject of a paper by Mr. G. Friebe, of Saddleworth, South Australia, who said it was a matter for regret that with the large number of trees that were being cut down right through the country districts, very little was being done in the way of replanting.

Those engaged in the beekeeping industry had already drawn attention to the harm that was likely to be done to the export trade in honey as a result of the cutting down of trees. It was admitted that on arable land trees had to give way to the cultivation of cereal and other crops, but on rough, hilly country, trees were too often ringbarked solely for the purpose of growing grass. He urged farmers to give serious consideration to the planting of trees on their properties. They would provide a source of revenue for the beekeeper, give much needed shelter to stock in summer and winter, and furnish posts and firewood for the farm.

Australian Trade Prospects in the East.

Fruit Trade with China could be increased from 2 per cent to 50 per cent.

The Rigid Import Restrictions in Manila Should be Relaxed.

Trade Commissioners Could Assist Business.

Report by W. Ranger, Committee of Direction of Fruit Marketing, Brisbane.

A COMPREHENSIVE REPORT on Australian trade prospects in the East is given in the report by Mr. W. Ranger, Manager Committee of Direction of Fruit Marketing, who recently visited Manila, Shanghai, Hongkong, Singapore, Batavia, Samarang, Sourabaya and Macassar.

The journey lasted from November 17, 1930, to February 7, 1931. The report deals with: (1) fruit; (2) other commodities; (3) Trade Commissioners; also trade statistics, currency and tariff schedules.

As regards Shanghai, particulars are given of American and Australian trade. American Oranges realised, c.i.f., the equivalent to 27/8½ for Navels (count 126); 20/5 for count 200; and 17/3½ for count of 288. Lemons, 150, 13/9; 300, 24/4½. Apples: Winesap, extra fancy, 175/216, 8/9; fancy grade, 8/1½; Newtowns, 125/163, 9/9½.

A consignment of 500 cases of Australian Oranges had caused much unfavorable comment: the fruit looked good, but was sour. Careful comparison showed the American Oranges to be better than the Australian.

Cold storage space is available in Shanghai—very necessary in the case of supplies from Australia, there being only one direct steamer per month.

The total imports of fresh fruits into Hongkong, from April, 1930, to January, 1931, were valued at £192,935, of which America and Canada supplied fruits to the value of £32,964, and Australia £2,843, or 8 per cent.

The total fruit trade with China and Hongkong, in which Australia might expect to share, is valued at approximately £171,000. At the present time Australia's share is less than 2 per cent., and there seems to be no reason why it should not be 50 per cent.

As regards Malaya and Java, the opinion is expressed that Australia is now getting practically all the fruit business possible.

Particulars are given of the shipping service between Australia and Eastern Asiatic ports.

Australia's fruit exports to the Philippines are practically nil, because of the stringent import regulations. Being under U.S.A. jurisdiction, the "fruit fly" regulations apply. It should be possible to convince the authorities that the fruit sent came from areas free of the fruit fly. The Federal Government could take this up with the Philippine Government.

Celery.—The Philippines offered a better market for vegetables than China. In Manila, several stated that in their opinion Australian celery, although not usually blanched as well as the American, was superior in flavor, and should find a ready market.

Details are given regarding the present export and marketing possibilities of wool, wheat, flour, butter and milk preparations.

Exchange and Banking.

There are difficulties of doing business between Australian and Eastern countries, because of the violent exchange fluctuations. There is a lack of forward exchange facilities in Australia. For practically every country in the world except Australia and Russia exchange can be "fixed." Improvements would follow if Eastern banks could transfer their funds without hindrance, or establish branches in Australia.

Trade Commissioners.

The question of Trade Commissioners is dealt with at length, and it is suggested that the appointment of two would lead to increased business—one at Shanghai (who would cover Hongkong), and the other as a travelling Trade Commissioner between the other ports with which Australia could profitably do business.

Canada with less than one quarter of the trade of the United Kingdom with China maintained four trade officials there: the United States had fourteen.

The report continues:

"Australia never had a greater opportunity of breaking into world markets, and it is a tragedy that her traders cannot take full advantage of the opportunity. Australia is missing trade opportunities which may never return."

FRUIT MARKETS IN THE EAST.

Southern China.

No. 5 of Series.—Continued from page 219, April "Fruit World."

FRUIT MARKETING in Eastern Asia formed the subject of an important Bulletin, following the visit of an American delegation recently. To give Australian fruitgrowers the benefit of this study, Mr. J. H. Lang, of Harcourt, has been summarising the report in the "Fruit World." The following is the fifth article of the series.

* * * * *

SOUTHERN CHINA embraces an area of 200,000 square miles, with an estimated population of 50,000,000 to 75,000,000 persons. It includes the British Crown Colony of Hongkong, which has a population of 977,000. Canton, distant ninety miles up the River, is the metropolis of Southern China, and the distributing centre for the interior, its population is 811,000.

Hongkong is, of course, under British law, and is practically a free port. It is the terminal port of many shipping lines, and from here goods are transhipped to the innumerable ports of the Far East. Its population includes 16,000 Europeans and 500 Americans, and these form a considerable market for imported products.

The direct imports of Hongkong from California for 1929, include: Canned fruit, 426,913 pounds, of which Peaches 148,547 pounds and Pears 66,735 pounds, are the chief items. Dried fruit, total 1,996,379 pounds, and includes 1,833,602 pounds Raisins and 84,226 pounds Prunes, Fresh fruit: 17,025 boxes Oranges, 7,245 boxes Apples, and 498,858 pounds Grapes, are the principal items.

Canton is the great Chinese city of the south. In 1928 its foreign imports were about £6,000,000, and its exports over £10,000,000.

The Cantonese are progressive, ambitious and turbulent. Owing to disturbed conditions, most large business houses have their headquarters at Hongkong.

Four railways are operated in Southern China. Much transport is, however, by junks and steamers.

The jagged coast-line of over 1,000 miles, with numerous bays and harbors, swarms with native craft.

The major portion of Southern China is worked by coolies, who transport on their backs a load of 70 pounds, which they carry some twelve miles a day for an average wage of 2/6.

The purchasing power of the people is difficult to estimate, but it is believed that 50 per cent. of the people are able to buy a package of dried fruit costing 5 or 10 cents, provided this happened to take their fancy. In the interior, conditions are less prosperous.

The climate is semi-tropical, hot and humid from April to September, but cool and damp in winter. Imported fresh fruits deteriorate rapidly. Dried fruits must be put up in tin-lined moisture-proof packages.

The staple food is rice, of which large quantities are consumed, also pork, beef, vegetables and fish. Sweets are not eaten at meals, as they are supposed to detract from the appetite.

The richer classes may eat fruit at the end of a meal. Fresh fruits are preferred to those that have been kept in cold storage. All cooking is somewhat of a problem because of the lack of firewood.

Native fresh fruits include Apples, Bananas, Grapes, Loquats, Oranges, Peaches, Pears, Persimmons, Plums and Pineapples, the retail price of these being from one penny to fourpence a pound.

30,000 boxes of American Apples are consumed in Southern China. Most of these come from Oregon and Washington, the wholesale price being 12/6 per box, retailing at 5d. to 7d. per pound.

At Hongkong four canneries manufacture native canned fruit, and have built up a large export trade to countries where numbers of Chinese reside. Raisins are the only dried fruit that have reached any volume of sale. Cartons of 15 oz. and 1¾ oz. are sold throughout Southern China, the former at 4d. to 5d. each.

The greatest factor of trade promotion among the Chinese is a low selling price. If any development of dried or canned fruit is to be made, the price must be reduced to compete with native products.

PHILIPPINE ISLANDS.

DESPITE American possession for a third of a century, these islands continue in their life and trade demands to be typically Asiatic.

Because of free trade with U.S.A., American goods predominate in the islands. In 1927, United States provided 61 per cent. of the imports, valued at £23,000,000. Wages have increased over 200 per cent. since Spanish times, but are still low, the per capita income being about £7 a year. The archipelago has a total length of 1,500 miles, the land area being 115,000 square miles, embracing 3,000 islands. The population is 12,354,000 persons, of whom only 5,800 were American, and an equal number of Europeans, mostly Spanish.

Rice is the basis of diet of the people, supplemented by other foods, the largest element of which is fish.

As far as America is concerned, the Philippines represent one of the best trade opportunities in Asia because of free trade with U.S.A., the protective traiff is, however, a disadvantage to other countries.

Native fruits come into the market at low prices throughout the year and limit the further development of the market for imported fresh fruit. The principal imported fresh fruits are Oranges, Grapes, Apples and Lemons.

Canned fruit has a much wider distribution, there being little native fruit canned. Considerable amounts of canned Pineapple come into the islands from Singapore. Of the dried fruit imported, 85 per cent. are Raisins and 10 per cent. Prunes.

The Filipino people are naturally extravagant and like the best quality of goods.

Dried fruit sales will probably, in the future, be limited to Raisins, Prunes, and White Figs. The sweetness of all these fruits is an important element in their sale.

Under continued stable conditions and continued free trade with U.S.A., these islands present a favorable opportunity for the promotion and sale of canned and dried Californian fruit of the sweeter type in the small package.

Next month—French Indo China and Siam.

FIG CULTURE.

"Subscriber," Havelock North, N.Z.—I am growing Figs with some success. Can you tell me whether we should allow any of the suckers which spring up round the main stem to fruit They frequently bear fruit. Also, what is the best manure for these trees?

Answer (by the Horticultural Division).—When the fruit is to be used in a fresh state the Fig tree is generally made to branch low down, much like a bush-grown Apple tree, to facilitate picking; but as a rule suckers should not be allowed to develop. If they do they are usually barren themselves and rob the tree. As long as the suckers from your trees are bearing fruit, however, they may be allowed to remain. The manures suitable depend on the land and the condition of the trees. On good land, reasonably moist, no manure should be required until the trees come into bearing, when green cover-crops or farmyard manure and fertilisers will be beneficial. The Fig tree is also partial to dressings of lime.—"N.Z. Jour. Agric."

APPLE AND PEAR EXPORT.

Should These Fruits be in Separate Holds?

S. Australia asks:—I have heard the question discussed recently of the advisability of Pears being carried in the same chamber as Apples. The general opinion was that it was unsatisfactory, and extremely risky, but at the same time it was stated that certain varieties of Pears had been satisfactorily carried with Apples in the past. I would be glad to have any information on this subject.

Answer.—The general opinion in Victoria is that it is not advisabe to ship Apples and Pears together unless both have been pre-cooled; even then it is not thought to be satisfactory, as Victorian shippers give definite undertakings to the shipping companies that, in consideration of their carrying the Pears in a chamber at 28 degrees, they will not be held responsible for any damage which may accrue to the Pears because the request was granted. Although the temperature of 28 degrees has been found eminently suitable for Pears, it is generally considered to be too low for Apples, which are usually carried at from 32 to 35 degrees. You will see from the foregoing that it is not thought to be good policy to carry the two commodities together.

SYDNEY ROYAL SHOW.

Excellent Fruit in Pyramids.

Hartley Wins With Apples and Tallong With Pears.

FIRST QUALITY FRUIT was displayed at the Sydney Royal (Easter) Show. The pyramids of Apples and Pears were particularly attractive.

The Hartley District Fruitgrowers' Association won the Apple pyramid competition for the fourth consecutive year by 1½ points. Tallong was second, and Goulburn third.

In the Pear pyramid section Tallong gained first place, Goulburn second, and Bathurst third.

Goulburn were unlucky in that the bulk of their green and yellow Apples did not arrive to time.

Excellent Quality.

Granny Smiths, Delicious, Rome Beauties, Jonathans, and Staymans were the Apples used in the Hartley pyramid, and the judges found it impossible to fault the grading and alignment.

The Tallong display lost 1½ points on the commercial value of the fruit shown, their varieties being chiefly Granny Smiths, King David, Delicious, Jonathans, and London Pippins.

Goulburn's pyramid consisted principally of Jonathan, Delicious, Rome Beauty, and King David.

The points awarded Apples trophies were:—

	Pomological Value.	Commercial Value.	Staging Value.	Total.
Hartley	37	13½	41	91½
Tallong	37	12	41	90
Goulburn	34	11	38	83
Bathurst	34	10	36	80

Splendid Pear Pyramids.

There were three excellent Pear pyramids, from Tallong, Goulburn, and Bathurst. The fruit was of good quality, though not of the same standard as the Apples. Some varieties were incorrectly named. Tallong had the winning trophy, and this district is to be congratulated on its success.

Points awarded the Pear collections were:—

	Pomological Value.	Commercial Value.	Staging Value.	Total.
Tallong	34	40	12½	86½
Goulburn	31	37	11½	79½
Bathurst	30	36	8	74

* * * * *

The other sections for fruit displays were not largely competed for.

* * * * *

Judges Appreciate Pyramids.

The judges spoke in terms of appreciation regarding the quality of the fruit and methods of display in the pyramid displays. In the Apple section the judges had the greatest difficulty in deciding the winning exhibit, the decision finally going to Hartley by the narrow margin of 1½ points—these being gained in the "commercial value" section of points.

* * * * *

Apart from the pyramids of Apples and Pears, prizewinners were as follows:—Apples: A. S. Brown, Butz Bros., J. E. Warn, T. H. Lewis, Banner Bros., W. S. Cripps. Pears: P. Gersbach, Butz Bros., A. S. Brown, Morris & Sons, R. H. Charles & Sons, L. Ayling. Export Fruit: A. S. Brown, Butz Bros., P. Gersbach. Miscellaneous Fruits: C. G. Milner, A. S. Brown, P. Gersbach, C. E. Smith, S. E. Allan, G. S. Pierce, J. H. Kelly.

Australian Apples
Australian Apples Pears Grapes
Australian Apples
Australian Apples
Australian Apples
Australian Apples Pears & Grapes

Australian publicity abroad.—A retail fruiterers' display at Ilford, England.
—(Illustration by courtesy "Journal of Agriculture," Vic.)

CODLIN MOTH CONTROL.

ORCHARDISTS ARE URGED to use every effort to control codlin moth. At the end of the present Apple and Pear season all infested fruit should be collected and destroyed. The carry over crops from one season are the cause of the trouble in the next.

Examine bandages and kill harboring grubs; replace bandages to trap grubs; clean up packing sheds; dip cases, sacking, etc., in boiling water for three minutes. Cleanse benches, graders, etc., probing all cracks, holes or joints.

Clean Up the Packing Shed.

When the last of the crop has been despatched the packing shed should be given a thorough clean-up (writes the N.S.W. Department of Agriculture). All receptacles, cases, sacking, etc., that have been used for holding fruit should be dipped, if possible, by wholly submerging them in boiling water for three minutes. Bins, benches, sizers, etc., that cannot be dipped should be thoroughly searched for any hiding codlin grubs, special care being taken to probe all cracks, holes, or joints. Where canvas or sacking forms part of the packing equipment, hemmed and frayed edges should be searched. If the sacking is old it is best to replace it with new material and burn the old stuff.

As an aid to moth control it is a great advantage to have all packing sheds and fruit stores so constructed that they can be made moth-tight. Then at the end of winter they can be closed and any moths emerging in the spring and early summer from imprisoned grubs can be destroyed as they are attracted to the windows by the light.

Advantages of Removing Loose Bark.

The following observations by the Orchardist at Wagga Experiment Farm demonstrate the advantages of removing loose bark and plugging all holes and crevices in the trunk and main branches of trees in order to prevent codlin grubs from sheltering therein.

During the month of September last and the early part of October, he writes, a systematic overhaul was made of the Pear and Apple trees in Block 1 of the orchard. All holes and crevices were cleaned out, all bark and broken limbs removed, and any places likely to afford harbor for codlin grubs were blocked up with putty made of whiting and boiled linseed oil. During this work something like 350 grubs were destroyed, all of which were found harboring in the main limbs above the crowns of the trees. That this work has proved highly beneficial the following figures show: —

In the six examinations of bandages carried out between December 1, 1928, and February 1, 1929, the average number of grubs found in the bandages was 952. For the same number of examinations in the same period of 1929-30 the average was 574, and for the present season only ninety grubs were found during the same period and with the same number of examinations.

It is pointed out that no spraying with arsenate of lead was undertaken in 1928 before the middle of December owing to the breakdown of the spray cart, so that an interesting comparison is afforded between the 952 grubs found in 1928-29 and the 574 found in the bandages in 1929-30 when a full spraying programme was carried out, and again between the 574 found in 1929-30 and the ninety discovered in the 1930-31 season when a full spraying programme, plus a thorough cleaning up and plugging of holes in the main limbs of the trees, was undertaken.

CITRUS GROWERS IN NEW SOUTH WALES.

Organising Efforts.

THE FRUITGROWERS' FEDERATION of New South Wales has sent out a circular setting forth their efforts to organise citrus growers in New South Wales, the Central Citrus Association having ceased to function.

The report prepared by the Secretary of the Board was submitted to various districts. The Gosford district has definitely refused to adopt the proposal or to consider any amended proposal.

A successful meeting of citrus growers was held in the hills district early in April. Growers attended from Kenthurst, Glenorie and other surrounding localities.

The scheme put forward provided for the enrolment of individual growers able to conform to grading and packing rules, and also for enrolling packing houses.

In regard to capital, a suggestion was put forward that this should be raised in the nature of shares of one £1 share, fully paid up for each 4,000 or part thereof bushels of citrus marketed by each member last year. With regard to working expenses, as it is desired that the Association shall be a non-profit one, the money necessary to provide working expenses to be raised by medium of a per case levy.

The whole question was fully discussed, and it was unanimously decided by the meeting in favor of the formation of some form of co-operative organisation with a view to improving the marketing of citrus, and the meeting was adjourned for a fortnight to enable delegates to consult with their district organisations with a view to arriving at a mutual understanding in regard to the details necessary for the introduction of some such system.

N.S.W. CITRUS CROP.

1931-32 Estimate.

It has been estimated by the State Marketing Bureau that the 1931-32 citrus crop will approximate 2,008,447 bushels of Oranges (677,483 bushels of Navels, 846,319 bushels of Valencias, and 484,645 bushels of common Oranges and other varieties), 502,123 bushels of Mandarins and 424,425 bushels of Lemons, making a grand total of 2,934,995 bushels.

NEW SOUTH WALES.

Young.—The writing off of the sum of £14,000 in regard to the Young fruit group settlements has been approved by the Minister for Lands Mr. Tully) on the recommendation of the Orchards Home Maintenance Area Board.

A further £1,300 will be found for additional advances for extra plantings, stock, improvements, etc.; and £875 for seed and fertilisers for green manure crops.

The Board found that an area of 18 acres of full-bearing and well-cared-for orchard was necessary to provide the settler with a comfortable allowance and to meet all his obligations. As regards the soil around Young, this was deficient in humus, green manure crops being essential.

Life is a voyage. The winds of life come strong
From every point; yet each will speed thy course along,
If thou when tempests blow
Canst keep thy course aright and never once let go.
—The Voyage of Life.

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

At the meeting of the Committee of the S.A.F.M.A. at Adelaide on March 27 there were present:—Messrs. H. J. Bishop (Chairman), R. Bleechmore, M. G. Basey, J. S. Hammat, R. O. Knappstein, E. W. Dearman, R. B. Pritchard, G. Mack, J. B. Randell, G. W. Selth, P. R. B. Searcy, H. N. Wicks, and Secretary.

Duty on Base Oils.—In accordance with a request from the Victorian Fruit Marketing Association, a letter had been sent to the Comptroller of Customs, Canberra, supporting request for removal of the duty.

Letter from Department of Markets, Melbourne, enclosing copy of letter from Mombasa Trading Stores, Kenya, East Africa, advising they are importers of Apples and Pears, and are anxious to do business with Australia.

Report re marketing Australian and Tasmanian fruit from the representative of the Port of Manchester.

Exchange Position.—Secretary advised that Mr. J. B. Mills, Vice-President, Victorian Fruit Marketing Association, had been appointed to represent this Association at the conference held in Melbourne on 23rd inst. between representatives of refrigerated shippers and shipowners, to discuss the question of exchange rates to operate on conclusion of the present agreement respecting freight charges. The shipowners' offer to be considered by the conference, was to charge exchange on the basis of 10 points below the bank's telegraphic transfer rates for remission of money from Australia to the United Kingdom so long as exchange is in excess of 20 per cent., but if exchange drops below 20 per cent., then half exchange rates will be charged.

Australian Apple and Pear Export Council.—Letter received from Mr. R. E. Boardman, Secretary pro tem, Australian Apple and Pear Export Council, notifying the interstate affiliations.

Research Committee.—Letter from Victorian Fruit Marketing Association, setting out the objects of the Research Committee, and advising that a similar committee had been formed in West Australia, was read by Secretary, and it was resolved that a committee be formed in this State with the idea of carrying out research work in conjunction with the Department of Agriculture, and also by individual members at orchards in different parts of the State. The following committee was appointed:—Chairman, and Messrs. H. N. Wicks, J. B. Randell, R. O. Knappstein, M. G. Basey, J. S. Hammat, R. B. Pritchard, and E. W. Dearman. Hope was expressed that meetings might be held at Secretary's office prior to Association monthly meetings.

Levies.—It was unanimously resolved that the levy for the present season be fixed on the same basis as last season, namely, ¼d. per case, and that two half-cases Pears should equal one case for the purpose of levies.

Apples and Pears Shipped in Same Chamber.—It was resolved that the Secretary write the Oversea Shipping Representatives' Association, and also the Victorian Fruit Marketing Association, asking for information as to results obtained in the past where Apples and Pears have been shipped in the same chamber.

The general opinion of members was that the results would be unsatisfactory, but it is understood that certain varieties of Pears were satisfactorily carried with Apples in the past seasons.

Among the Flowers.

(By "Syringa.")

AS THE MAJORITY of summer-flowering annuals have now outlived their usefulness, beds and borders should be cleared and preparations made for the sowing of seeds or the planting of seedlings of hardy annuals.

The chief varieties of seeds that can be sown now in open beds or borders include:—**Calliopsis, Carnation** (Marguerite), **Candytuft, Centaurea, Clarkia, Dianthus, Eschscholtzia, Larkspur, Linaria, Lupin, Mignonette, Mimulus, Phlox, Godetia, Ryburgh hybrids** and **Shirley Poppies, Salpiglossis, Nemophila, Virginian Stock** and winter-flowering and spring-flowering **Sweet Peas.**

Seedlings to plant are **Pansy, Viola, Iceland Poppy, Antirrhinum, Primula malacoides, "Nice" Stocks, Cinerarias** and **Wallflower.**

Bulbs of **Anemone, Ranunculus, Hyacinths, Tulips, Ixias, Iris,** etc., may still be planted.

Plant **Violets, Carnations, Verbenas, Heuchera, Polyanthus, Primroses, Paeonies** and **Liliums.**

Plant Shrubs, etc., and Prepare the Ground for Roses.

THE PLANTING OF SHRUBS, trees, and hedge plants should be proceeded with now, and preparations made for the planting of Roses next month. Roses can be successfully grown on light soils, but do best where the ground is stiff, even clayey, and it will be found advantageous to augment light, sandy or shallow soils with some good heavy loam or clay.

All soils, however, should be well trenched before Roses are planted, and a good supply of well-rotted stable manure dug in. A good open position is suitable for Roses, if possible with an easterly aspect. Do not plant too near trees or large hedges, which rob the plants both of the well-manured soil, and the light as well.

AUSTRALIAN DRIED FRUITS.

Oversea Sales.

The Chairman of the Commonwealth Dried Fruits Export Control Board (Mr. W. C. F. Thomas) advises that during the week ending April 16, 1,426 tons of Australian dried fruit of the 1930 season were sold in Great Britain for a total value of £49,689. These figures include 808 tons Sultanas, which sold at an average of £41/5/- per ton, and 578 tons Currants, at an average of £26/8/4 per ton.

The sales of Currants complete the disposal of the 1930 season's fruit, and during the past year 13,084 tons Australian Currants realised the average of £35/0/9 per ton. The quantity represents record shipments of Currants to British markets.

The quantity of Sultanas in store and afloat is 8,184 tons, compared with 10,088 tons at the same period of last year, but prospects as regards maintenance of price are considered more favorable owing to the fall in production during the present season.

From the 1931 season's harvest, 10,211 tons have been shipped to date, comprising 5,988 tons Sultanas, 4,172 tons Currants, and 51 tons Lexias. First shipments of Currants have arrived in London, and as early shipments show high quality it is probable that during the first few weeks good prices will be secured for first-class samples.

SUDDEN DEATH OF MR. S. A. COCK.

Victoria Loses Valued Citriculturist.

BY THE SUDDEN DEATH of the Victorian Citriculturist (Mr. S. A. Cock), the Department of Agriculture has lost one of its oldest and most capable officers of the Horticultural Division. He joined the Public Service as a junior postal official about the year 1885, and has thus been a servant of the State for over 45 years. For over 30 years Mr. Cock was connected with horticultural work, and for the last ten years occupied the position of Citriculturist.

On the passing of the Vegetation Diseases Act in 1898, Mr. Cock was a member of the first band of earnest workers who were appointed under Mr. Chas. French, Senr., to carry out the provisions of that Act. Mr. Cock was stationed in Bendigo, for a considerable number of years travelling the whole of the Bendigo and Northern areas as an Orchard Inspector and Supervisor. During the period of his official life in the North, very considerable developmental work occurred, large areas being planted; and as a result of this work, modern methods of combating disease were evolved. At the same time a considerable advance in the export of fruit, both interstate and overseas, occupied the attention of officers of the Department.

Situated as he was in the centre of a very large and important fruit-growing area, Mr. Cock, in the early days of his duties, became keenly interested in the interest and advance of citrus culture. Subsequently, when the necessity for the appointment of a special officer to have the oversight of this phase of horticulture arose, Mr. Cock was selected for the position. Mr. Cock's forceful character, his keen interest in the work, and his ability to grasp the requirements of citrus culture, soon made him not only a popular officer, but one whose capabilities were recognised everywhere. The successful initiation and carrying out of fumigation methods for the eradication of scale insects, the question of suitable stocks and varieties for different soils and areas were among the subjects which occupied his attention, and there is no doubt that the present favorable situation of the citrus industry is largely due to the activities of Mr. Cock.

From a literary aspect, Mr. Cock has left behind two very valuable brochures on Citrus Culture and Tomato Culture. In addition, his articles in the "Journal of Agriculture," as well as his wireless talks, were always looked forward to with interest.

He was an officer who could always be approached, genial and particularly happy in the performance of his duties; for a long time Mr. Cock will be missed not only by his official brethren, but also by those with whom he came in contact in his official capacity.

Mr. Cock leaves a widow, to whom we tender our most sincere sympathy.

NEW SOUTH WALES.

The Annual General Conference of the Fruitgrowers' Federation of New South Wales will be held at Sydney on June 24, 25 and 26.

District conferences, which precede the general conference, will be held thus:—

Central Coast, Gosford, May 21; Metropolitan, Windsor, May 23; Northern, West Maitland, May 26; Central Tablelands, Bathurst, May 28; Southern, Albury, June 2; Irrigation, Leeton, June 4.

CODLIN MOTH PARASITE.

Successful Tests With Trichogramma in California.

Oriental Peach Moth Also Attacked by Parasite.

THE POSSIBILITY and the practical use of Trichogramma in biological control work is dealt with in detail in the technical journal "Hilgardia" issued by the University of California Printing Office.

Mr. Stanley E. Flanders writes on the subject: "Mass Production of Egg Parasites of the Genus Trichogramma," and shows that the production of this parasite in large quantities is now feasible.

Within the last two years over a score of entomologists have turned their attention to Trichogramma, and are investigating its use against the codlin moth, the European corn borer, sugar-cane borer, the pecan nut case-borer, the corn ear worm, celery leaf-tyer, tea tortrix, oriental Peach moth, rice moth and cabbage butterfly.

In case of field-crop insects such as the European corn borer, early mass liberations when host eggs are fairly abundant and there is no natural parasitism may result in the building up of a parasite population early in the season. In such a case success is dependent on the natural accretion.

To employ this accretive method in the field when host eggs are comparatively scarce is useless. If liberations are delayed until the host eggs become abundant the acceleration of the natural parasitism probably would not be affected by the addition of more parasites. The saturation point of Trichogramma is not likely to be advanced since its survival potential decreases as its density of population increases above a certain point. The saturation point appears to be determined by unknown environmental complexes.

For the parasite to be of value, its population at this saturation point must be dense enough to prevent the host from becoming economically injurious.

The most likely means by which the degree of parasitism may be built up earlier in the season is through utilising egg-concentration centres. In the case of night-flying hosts having females which are in some degree positively phototropic, egg deposition may be concentrated in the vicinity of lighted points in the infested area. Trichogramma could then be colonised at such focal points and an early increase in parasitism started.

In the control of orchard insects, such as the codlin moth or Orange tortrix, parasites should be liberated each week or twice a week during the first part of the egg-deposition period of the moth, including the peak of egg deposition, possibly 10,000 to 50,000 being placed on each tree during the season. This type of control is analogous to spraying and dusting in that a greater amount of lethal material is used than is actually effective, that repetition may be necessary, and that the effect is more or less immediate. This might be called the inundative method.

In the control of the codlin moth on Apple trees the first effort will be to substitute Trichogramma for the cover-spray applications of lead arsenate, and thus eliminate the arsenical residue problem.

The basis for commercial control by means of this parasite is mass production at a low cost. It is probable that in the near future improved methods in rearing will reduce the cost of Trichogramma production to less than 10.00 dollars per million.

Under a recent test over 200 codlin moth eggs were parasitised in approximately 220 eggs under observation.

Reworking Unprofitable Trees.

THE REWORKING of unprofitable trees is a matter in which most orchardists are interested, the old system of cutting back to the stump and grafting is now almost completely discarded, not only because of the danger of the introduction of fungus spores (dieback), but also because the process is altogether too drastic. It is indeed doubtful if large trees ever fully recover after such treatment.

Yet another drawback is the length of time before the tree is re-constituted and bears payable crops. A method of refurnishing which has neither of these disadvantages is described by Mr. P. H. Thomas, of the Tasmanian Department of Agriculture.

Briefly, it consists of heading back and stripping the unprofitable tree in the winter (Fig. 1), then in February, when a multitude of new shoots have appeared, these should be spaced out and budded to the required variety (Fig. 2). The usual heading back of the shoots and restraining of the old variety growths is the care of the following seasons, and it is claimed that two years from the budding the tree will be completely refurnished and should carry a good crop of fruit.

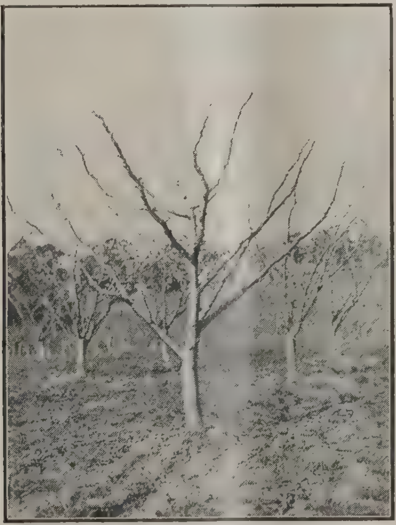


Fig. 1.—Ribston Apple stripped of laterals and Fruit Spurs.—June, 1927.

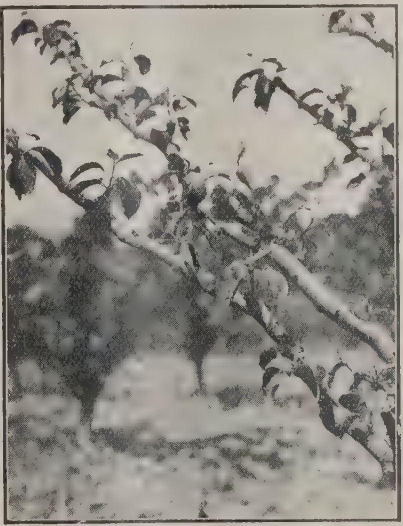


Fig. II.—Section of tree shown in Fig. I. "Thinned" budded over to Jonathan.—February, 1928.

(Illustrations from Tas. Dept. of Agriculture. Further details next issue.)

No estimate is given of the cost, though this must be considerable, as, according to the text, the shoots to be budded are spaced 8 inches apart along the branches.

In computing costs, however, it is not the initial expense which should frighten, for to offset this we are told of a re-established tree in two years from the budding. This means that only two fruiting seasons have been lost, as against at least four under the old system. The extra profit, therefore, should leave a margin over the expense.

A number of growers have adopted a system of putting many grafts into a tree much higher than the stump. The writer saw a block of trees reworked with an average of twenty scions per tree, and alongside of these a block of trees carrying a full load of fruit; these had been similarly treated three seasons before.

Reviewing the two systems—budding as described by Mr. Thomas, and high grafting with many scions, it seems that there are arguments for each—the most convincing one for the grafting is that the bearing tree would be completely remade from the grafting upwards and the cutting out and periodical refurnishing which every tree requires would be simple, whereas with the budding the old foundation persists to a height, and shoots from it would be continually intruding. It would be interesting to get comments from your readers. Those of most value, of course, would give details of cost and summarise a profit and loss account as compared with other methods.

E. H. HATFIELD.

Tynong, Vic., 4/4/31.

Black Aphis in Cherry Trees.—Commenting on specimens of diseased foliage of a Cherry tree forwarded to the Department of Agriculture for identification, Mr. Geo. Quinn (Chief Horticultural Instructor) says from the external appearance of the foliage he is of the opinion that their curled and stunted condition had been produced by an attack of the black aphis of Cherry (Myzus cerasi), which occurred probaby in November or December. When the curled up folds were opened out, they enclosed myriads of moulted skins of aphides, which strengthens the above view as to the causal organism. At any rate, the general appearance is identical with terminal leaves on Cherry trees to be found here and there in the Blackwood collection, where a slight and late attack of this pest was experienced this season. The precautionary measures lie in watching for the aphides on the tips of the young shoots in early summer, and if detected before they have been there long enough to cause the leaves to curl, a good drenching with Black Leaf 40 nicotine in soapy water applied as a spray will stop them, but success depends on prompt action.—S.A. "Journal of Agriculture."

Rootstock Influence in Fruit Growing.

Valuable Research Work.

THE FRUIT GROWER has always found one of his outstanding difficulties in the variability of his produce. The fact that varieties seldom if ever come true from seed caused in the first instance propagation by seed to be abandoned in favor of a vegetative method which reproduces completely the characteristics of the parent plant. As, however, not all desirable varieties are capable of producing suckers or forming adventitious roots from the stem for layering, it has been found in practice preferable to bud or graft the variety with desirable fruiting qualities on to an independent root system. Thus the great majority of the tree fruits, such as the Apple, Pear, Plum, Cherry, Peach, citrus fruits and, in some countries the vine, are reproduced by means of budding or grafting, and hence are composite structures made up of two individuals, the scion and the rootstock.

Variability is not, however, entirely eliminated by means of the composite tree. That the rootstock may influence the tree in certain ways has come to be recognised by nurserymen and growers, at any rate in Western Europe. The rootstock may be a seedling or may be formed by layering some readily rooting variety. There has been a widespread idea that a seedling stock will give the vigor of growth necessary for an orchard tree, while a layered stock is shallow rooting, and will produce a small and comparatively early cropping tree. Since the scion variety is in reality a single individual, any difference must be attributed to the influence of the stock, and the recognition of this fact caused studies of the two kinds of fruit tree stocks in common use in Western Europe to be undertaken in England in 1913.

The **variability of the seedling stock** was recognised by growers as being often reflected in the scion, but was regarded as inevitable on account of its origin. It was a common experience for a grower who had stocked his orchard with a single variety in apparently uniform condition, to find the trees developing the most diverse habits of growth and cropping capabilities. To quote an actual case: some Early Victoria Apples, budded on seedling stocks, were selected from the nursery as one-year-olds for their uniformity in size. Twelve years later at Malling the trees range from spreading dwarfs to vigorous upright trees and their cropping is equally varied. The best trees in the group bore at the rate of 51 tons an acre, and the worst at the rate of 10 tons. This means that the grower of a mixed lot of trees such as these would, at the end of 13 years from planting have harvested about 28 tons of fruit per acre, whereas if he could have standardised his trees to produce at the rate of the best he would nearly have doubled his crop.

The standardisation of seedling stocks, in the first place for the Apple, was undertaken by the Research Station at Long Ashton, Bristol. An attempt was made to obtain uniformity by finding typical vigorous seedlings suitable for the production of orchard trees which were also capable of being propagated by vegetative means. This object was achieved in the rootstock now known as Bristol V, which is layered but retains its deep rooting system and gives a large slow-cropping orchard tree.

This orchard rootstock fulfils the grower's requirement of uniformity but from the economic point of view it has lost the seedling stock's advantage of easy and cheap production, and other methods of obtaining uniformity may be desirable. One method suggested is the grading of seedling stocks in the nursery. It is recognised that the nursery practice used in producing a standard tree necessitates a certain amount of selection to obtain the required height of stem, the weaker stocks being eliminated in the process, but this entails waste and again increases the cost of production.

The process of "bench grafting,' which is much used in the Middle West of the United States, seems to bring about a considerable degree of uniformity in the orchard. The scion is grafted directly on to a portion of the tap-root of a seedling stock and it is now thought that by this means the influence of the stock is eliminated. It has been shown that the root system of the resulting tree is so much influenced by the scion that varieties can be distinguished by their roots alone. This method would seem to be entirely satisfactory were uniformity in the orchard all that was to be desired and if different climates, soils and purposes had not to be taken into consideration. It is obvious that if the individual characteristics of both the rootstock and the scion can be retained and their interaction understood, a far wider range of possibilities is opened up.

That the **stock has a far wider influence** than was at first realised has been discovered by the East Malling Research Station, which undertood the study of layered stocks in 1913. The work was begun with the object of identifying the different vegetatively propagated rootstocks in commercial use. The layered stock, which at least should be uniform, was frequently misnamed and

Edwards Bros., Red Hill, Vic., with prize-winning Jonathan Apples and Dan Wuille-Mumford Cup.

not true to type, and considerable confusion arose because the nursery men did not know the possibilities of the young trees. Perhaps a variety sold to a grower as being on a "Paradise" or layered stock and therefore suitable for interplanting between his permanent standard trees, turned out to be as slow-growing and widespreading as the permanent trees; he had to wait eight or more years longer than he expected for any return on his outlay and in addition his orchard became overcrowded.

The analysis of these stocks at Malling soon showed that the so-called dwarfing stocks consisted of 17 varieties, which could be divided into four groups showing striking differences in their influence on the tree.

The following table shows a comparison of the size of tree and the cropping capacity of Lane's Prince Albert worked on a representative of each of the four types and grown on good medium loam at East Malling.

Table I.

Stock.	Suitable number of trees per acre.	Crop returns per acre (bushels) Total for first 4 years.	Total for first 7 years.
Dwarf IX.	504	106	1,123
Semi-dwarf II.	268	34	590
Vigorous I.	150	4	302
Very vigorous XVI.	101	0	152

It is seen that the relative order of cropping in early years is the converse of that of vigor and from the space required that the trees on stock I. and XVI. developed into fully-sized orchard trees. The results of this work are that (1) the grower can now plant one variety, if he so desires, as permanent trees and fillers, because he knows the relative vigor of the rootstocks; (2) he can be certain of early returns from the dwarf trees; (3) he knows how to space the trees when planting so as to make full use of the ground when the larger trees have come into full bearing; and (4) he can make his provision for tillage operations knowing with considerable accuracy the type and size of machinery which will be suitable. Such a measure of control more than compensates for the extra cost of a layered stock.

Similar **trials on different soils** with the same variety on the four types of stocks have shown that the rootstock must be selected in relation to soil conditions as well as to the purpose of the tree. It was found that the absolute size of the tree on any given stock differed markedly on different soils, yet in each case the relative vigor and precocity remained the same. Table II. shows the behaviour of two very different varieties on the four stocks on different soils.

It is hoped in time to be able to construct similar tables for all possible combinations of soil and variety.

Another characteristic which appears to be influenced by the rootstock is **the time of blossoming.** Control of this feature is of value from two points of view: in places liable to late frosts it is advantageous to be able to grow trees on vigorous stocks which cause late blossoming, and in view of the present knowledge of self-sterile and inter-sterile varieties it is obviously useful to be able to ensure that two varieties which are planted together for pollination purposes will be in blossom at the same time.

Fruit quality as expressed in **color and size** is another character which is most certainly influenced by rootstock. It has been found that the very dwarfing stock Malling Type IX. produces pre-eminently fine quality dessert Apples which are larger and appear riper than fruit of the same variety picked from other stocks and are equally good for storing. On the whole the more vigorous stocks, tend to give less color, the Apples appearing green when ripe on the vigorous Type XVI., and the fruit tends to be smaller on vigorous stocks, though size is apt to fluctuate from year to year on the same tree.

It is evident that in the nursery certain Apple stocks are far more susceptible to certain diseases and pests, such as canker (Nectria galligena), scab (Venturia inaequalis), mildew (Podospharea leucotricha), crown gall (Bacterium tumefaciens) and leaf scorch than others, and facts are gradually accumulating from orchard experience and direct experiments which show that the varying susceptibility is transmitted to the scion.

Investigations into the nature and effect of Pear, Plum, Peach and Cherry stocks have also been carried out at Malling. In each case the commercial stocks were found to lack uniformity, and the first work was directed towards bringing order out of the confusion.

In the case of Pears it has been found that certain of the Quince stocks in common use show a marked "incompatibility" with certain varieties, which explains many previously unaccountable failures in the orchard. Some Quince stocks have been found to induce earlier fruiting than others. It has been possible also to select and propagate vegetatively a series of Pear rootstocks which will give a wide range of performance when grafted with a given variety. There are indications of disease resistant Pear stocks and in America Pears on certain root stocks have been found definitely more susceptible to a physiological disease known as "black-end" than others, some often showing 100 per cent. immunity, and others 100 per cent. susceptibility.

In the work with Plum stocks **for Plums and Peaches,** striking evidence has also been obtained of "incompatibilities" and of stock preference with several of the common commercial varieties. And although at present it

Table II.

Soil type.	Dwarf.	Semi-dwarf.	Vigorous	Very vigorous
		Bush Lanes.		
Medium loam	Moderate	Good	Vigorous	Very vigorous
Sandy loam	Small	Moderate	Vigorous	Vigorous
Heavy clay	—	Moderate to poor	Good	Vigorous
Light sand	Very poor	Poor	Small	Moderate
		Bramleys		
Medium loam	Good moderate bush	Vigorous	Very vigorous	Too vigorous
Sandy loam	—	Good	—	—
Heavy clay	Very small	Good, small	Good	Vigorous

is not as easy as in the case of Apples to control the size of the Plum or Peach tree by the influence of the stock during its development, it has been found possible to vary its period of blossoming and habit of growth by this means.

Thus the variability which was one of the chief obstacles to successful fruit growing has been brought under control and turned to account. It is possible for a grower to-day to predict with considerable exactitude over a wide range of conditions of soil, variety, etc., the approximate size to which an Apple tree will grow, the age at which it will come into cropping, and even other factors, such as its period of blossoming and its propensities to certain diseases and pests, and the size and quality of the fruit itself. There is also already sufficient evidence obtained from work on the stone fruits and citrus fruits to show that the day is probably not far distant when it will be possible similarly to control by means of the rootstocks all fruits grown as composite structures.—A. M. Frampton, in "International Review of Agriculture," June, 1930.

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Confidence.

Think big, and your deeds will grow.
Think small, and you'll fall behind.
Think that you can, and you will.
It's all in the state of the mind.

A man can do anything in the world if he doesn't mind not getting the credit for it.—Maurice Baring.

* * *

Answered.

While strap-hanging in a crowded tramcar, a lady trod on the toes of a man sitting down.

"Do you know that you are standing on my feet?" he said, testily.

"If you were polite you would be standing on them yourself!" remarked the lady.

Strawberry Culture.

Preparing the Land — Varieties — Planting Methods.

Useful Seasonable Hints from N.S.W.

FOR SUCCESSFUL STRAWBERRY GROWING, a good water supply and ready means of access to market are the first two essentials. A north-easterly aspect is desirable, and a sandy loam with a clayey subsoil is the soil most suitable, but both these points are quite secondary compared with water supply. This information is contained in the Bulletin published by the N.S.W. Department of Agriculture on the subject of Strawberry growing. The information was compiled from the experiences gained in the Central Cumberland district (near Sydney)—the leading Strawberry district of N.S.W.

Continuing, the article states:

Really good beds of Strawberries may be seen even on land with a westerly aspect, though it is wise to pick a slope which will catch as much of the morning sun as possible. As for soil, if sandy loam is available it should certainly be chosen. Such a soil produces the brightest colored berries, gives the best root service—thus enabling the plants to assimilate all the nutriment put into the land—and is much more easily worked. Black soil will grow plants all right, and in many cases will do with less artificial manure, but it sets down very hard after watering, and is difficult to work, while the berries grown on it are darker than those grown on sandy loam, and lack their lustre.

Newly cleared bush land is preferable if it can be procured—such land does not produce many weeds, and does not need so much manure—but the prospective grower who cannot procure just the sort of land he wishes, need not be discouraged so long as he has the water supply. If his soil is not just suitable, he can loosen it by dressings of stable manure or bush rakings, or strengthen it with fertilisers, provided he has the water to enable him to get the good out of the fertilisers at the right time. Without the water, fertilisers are uncertain in their effect.

Preparation of the Land.

The land should be ploughed or dug up from 8 to 10 inches deep, and harrowed down well. A dressing of about one ton to the acre of blood and bone (or, better still, if available, its equivalent—about 30 tons—of stable manure) should then be spread over the surface and ploughed or dug in. If blood and bone is used a very good plan is to sow the manure in every third furrow, and bury it that way. If an 8-inch furrow is made the fertiliser will be brought immediately beneath where the row of plants will subsequently come. This method buries the manure deeper and reduces the production of weeds. The working should be done a few weeks before planting time if possible. If the manure has not been worked in previously, and is being applied when planting, care should be taken not to bring it into direct contact with the roots of the plants, as it may result in scalding.

Varieties.

In making a choice of varieties it is advisable to consider particularly certain points of merit. Color is, perhaps, of primary importance, as, no matter how attractive the berries are in other respects, if they are either too light or too dark in color, they will not sell readily. The most suitable color is a bright pinky-red to a bright deep red. A dark vermilion (as in the case of King Edward) counts against the marketing quality of the berry, and the same thing applies if the color of the berry is too light, as in the case of Rhodes Special and other light-colored varieties.

Size seems to be the next point, as large, well-colored berries always make a good show. The third point is texture. If this is fairly firm, the berries will maintain their attractive appearance and keep in good order for several days, whereas if they are soft and mushy they must be sold very quickly or the profit will be lost in waste. Flavor comes fourth on the list when the berries are to be sold on the open market, though it becomes a little more important if they are grown to order for restaurants or private house sales.

Bearing habits, growth of plants, and susceptibility to leaf spot and other diseases should also be considered, while the time of ripening is also important, particularly if the water supply is likely to be limited. In this case, it is wise to choose and early ripening variety, as by so doing one can often get one's main first crop off before the dry conditions set in.

Another thing worthy of consideration is the nature of the blossoms, whether perfect (staminate) or imperfect (pistillate). In the pistillate forms the centre of the blossoms consists of a group of short pistils, showing a rather smooth regular surface, which is only broken by an occasional stamen. In the staminate forms a number of long-stalked stamens will be noticed standing up above the pistils. These carry a good supply of pollen, which is the fertilising element. The staminate forms are self-fertile, and will bear good crops without the aid of any other variety, whereas the pistillate forms require a staminate variety to be planted in conjunction with them for pollination purposes. This involves a good deal of trouble, and is only justifiable where the superior nature of the berry warrants it. When pistillate forms are planted in conjunction with staminate, they often give even better crops than the latter, but it is not wise to plant pistillate forms alone.

Following are the leading commercial varieties of Strawberries, arranged in order of merit:—

Creswell's Seedling.—This is our standard commercial variety. It came into prominence about 1895, and has maintained its position ever since. This berry is large, irregular, conic, from long to wedge, often flattened on one side, at times with a tendency to neck at the base. Color crimson red, flavor fair, texture fairly firm, foliage light, runners numerous, leaves rough and hairy, leaf serrations narrow and pointed, blossom staminate. Very heavy cropper; yields two good crops in the year, and where well cared for the plants often give several other off crops. It is not unusual to see this variety carrying ripening berries from November to June. Although these off-crop berries often realise good prices, it is questionable whether it is wise to encourage them too much, as by doing so one has to suffer loss on one of the main crops. For instance, if the plants are kept in good order, and the winter is mild, they will often strike out into blossom, and set a heavy crop of short-stalked berries. If the weather keeps mild, a fair percentage of these develop into marketable fruit, but if late frosts or other trying conditions come along most of them perish. Where this happens the main first crop is seriously affected, as the plants do not have sufficient time to develop new crowns. This is serious in the case of Creswell's Seedling, which only carriers a small amount of foliage, the crown of young berries consequently having little protection from either frost or sun. However, being an everbearer, if it loses on one crop it generally makes good on the next.

Doncaster.—Berry large, round to wedge conic. Of the Creswell type, the two berries resembling each other very much, the main differences being that the Doncaster is round-pointed, long conic, and more even in shape and is a little lighter in color. The blossom is complete, and the variety is a heavy bearer. The leaves are tough and hairy, and the serrations moderately wide, but pointed. Three other varieties of the same type may be included here, namely, Dr. Moree, Glenfield and Melba. The berries resemble Doncaster so closely that it was not considered worth while to have them photographed separately. All these varieties have been grown satisfactorily, but, owing to slight defects, have been abandoned in favor of the old Creswell. The leaf shown is from a very vigorous young plant, and the serrations are consequently rather wider than usual.

Port Macquarie.—Berry large, globose conic, color bright dark red, flavor good, texture firm. Good bearer on first crop, but a little light on the second. The plant is a vigorous grower, the leaves are large and crisp, and the leaf serrations are wide and round. A hard, black spot appears on the leaves towards the end of the season, but so far has not been known to be very serious. This variety has a slight advantage over Creswell's Seedling in that it ripens about three weeks earlier, but its bearing qualities are not nearly so good. It came into prominence in the district referred to about 1922, and for a few years was Creswell's nearest rival.

Fendelcino.—Berry very large, irregular conic, with tendency to neck at the base, seeds large and prominent. Color darkish bright red, slightly darker than Creswell when fully ripe. The berries in the early stages are very white. The plant is a vigorous grower, and appears to be fairly free from disease. The blossom is incomplete (pistillate). The flavor is good, and the texture firm. The leaves are large and tough, and the serrations broad and rounded. This is a medium, but fairly even cropper, and the berries do not seem to suffer so much from buttoning as in some of the other varieties. If, by interpollination, its crop can be increased, this variety will prove a close rival to Creswell. It will be a little more trouble to grow, but this will be justified by the superior nature of the berry. Rhodes Special has been used with good results in this connection, but as it is not a good commercial variety there is still room for improvement. Port Macquarie is now being tried. Creswell's Seedling is not suitable for this purpose as it is too late in blossoming. The time of ripening of Fendelcino also is two or three weeks ahead of Creswell.

Ettersburg 89.—Berry fairly large, globose conic, color, light red with a slightly yellow background, which it appears to have inherited from Rose Ettersburg. The flavor is good and the texture firm. It resembles Port Macquarie a good deal, but is a little smaller and slightly brighter in color. The plant is fairly vigorous, but is very susceptible to leaf spot of a bad form. The leaves are round and very crisp, and carry a bluish tinge which is very noticeable. The serrations are broad and rounded. It bears very heavily on the first crop, but is light on the second.

This would be a splendid variety if it were not so susceptible to leaf spot.

King Edward (or **Imperial Malakoff**).—Berry globose conic, medium size; color vermilion red (too dark for market); flavor very rich, texture fairly firm. Crops very heavily on first crop. Throws out long arms and blossoms and sets a big crop of berries for the second, but fails to mature them to such an extent that the majority of them have to be picked for jam making. The plant is a vigorous grower and is fairly free from disease, with the exception of the bad buttoning of the second crop berries. The blossom is highly staminate, and possibly this attracts insects, which damage the pistils and cause the buttoning of the berries. Thrip or other small insects might easily damage a few cells and bring about the contortion of the berries, but so far it has not been possible to determine what is the cause. If the buttoning could be overcome, this variety, in spite of the darkness of its color, would hold its own with most others. It ripens about three weeks ahead of Creswell. The leaves are large and crisp, and dark green in color; the lobes are round and the serrations broad and rounded.

Queensland Phenomenal.—Berry medium sized, long conic, inclined to neck at the stalk end; color bright red, flavor rich, texture very firm, blossom staminate; good bearer on first crop, rather light on second. The plant is fairly vigorous, but in the district under discussion was proved susceptible to black spot. This is claimed to be a leading variety of Queensland. It started very well with us, but it appears to be running out in size, possibly on account of the effects of leaf spot, which attacked it badly. The berry as we grow it does not compare with the Queensland product.

Marguerite.—Berry large, long conic; color bright pinky red; flavor fair, texture rather soft; good bearer; plants vigorous, runners plentiful. Has been out of vogue for many years in the Central Cumberland district, but there are still a few plants in existence. After the days of the old English White Strawberry, known as Hautboy, which was the standard variety in the late 'eighties, this, and two round conics, Warren's Seedling and Trollope's Victoria, took the lead in the red Strawberry trade, and, with Creswell's Seedling (which entered the field a few years later), continued as commercial varieties. They lasted for about 15 years and then ran out, leaving Creswell and its allies to uphold the trade. This they did until about 1923, when a kind of wilt attacked them, and it appeared as if they were going to follow suit, but after a few years they revived again, and they are now almost back to normal and continue to hold their own.

Rhodes Special.—Berry large even-shaped long conic. The seeds are small and lie close in to the berry, giving it a smooth appearance. The color is a pale, yellowish pink, and the texture is very soft and mushy. It is also of poor flavor. These last three weak points put it out of the running as a commercial variety. The plants are very good doers, the blossoms are highly staminate, and in bearing habits this variety comes the closest to Creswell's Seedling. The plants are also very free from disease. As a kitchen garden variety or a pollinating agent it is worth a place. It might also be useful in plant breeding. If a variety had the bearing qualities of this one and fruit of the Fendelcino type, the berry could afford to lack some of the latter's color—it would still be a splendid fruit.

Two new varieties have been introduced by the Department in recent years, but local conditions did not appear to suit them. **Gandy** is a standard American variety. In this case the plants did not do too well and the fruit was too small. **Madam Kooi**, an English variety, produced some exceptionally fine berries, very large and of a nice color, but the plants could not stand our climate, and it was with difficulty that they were kept alive.

Method of Planting.

Two methods of planting are in vogue in the Ryde and Pennant Hills district—the single and the matted row methods. The single row is the more popular, but some growers contend that the matted row (see accompanying figure) provides more shelter for the berries.

When planting in single rows, the rows should be about 2 feet apart, and the plants set about 10 inches apart in the rows.

When a matted row is needed, all that is required is either to go through the bed after it has been planted as just stated and plant another row in every second space, or to wait until the runners begin to spread, and leave such new plants as are evenly spaced, between every second pair of rows. When these are well rooted, the runners between the main plants and the new ones may be cut, and the latter allowed to establish themselves.

If a grower determines from the start to have matted rows, the three rows to form the matted one are best planted 10 inches apart, and an extra width of 4 inches allowed for an alley or path row. These measurements allow sufficient room for the pickers and for the cultivator to be run through in off seasons.

The number of plants required for an acre, if planted 2 feet by 1 foot, would be 21,780; if 2 feet by 10 inches, 26,136. If matted rows are planted, the number of plants needed will be increased by one-half.

How to Plant.

For planting, choose only good healthy runners with a good root service. If the roots are too long, cut them back to about 3 inches. If the ground is in good tilth, a hole sufficiently large for the plant can be hooked out by hand or with a small scoop; otherwise a small drill can be made. Spread the roots a little when planting, so that the root service may be evenly divided all around the plant, and leave the crown of the plant just above the ground level. When the plants are set, press the soil around them fairly firm. A line should be used when planting, as straight rows not only look well, but are essential if a horse is to be used amongst them or surface irrigation practised.

Time for Planting.

May is the most popular planting time in the district under discussion. Planted in this month, the plants have a chance to get well set ready for the main crop, but they can be planted up to the end of July, and if the winter is severe this late planting often gives the best results. As a matter of fact, late planting has come into favor during recent years, and is being practised by some of our leading growers, who plant even as late as August.

If a grower has a piece of land upon which he is not likely to have too many weeds, a planting in February will give an extra well established plant for the main crop, and one which, without being injured for the main crop, will meantime carry a few early berries. To obtain such a result, it is necessary to leave the first runners which come out while the second row is maturing, and thus suffer loss in connection with that crop, as only the two first runners can be used for this planting. The practice is not very general in the Ryde district, as growers claim that the benefits derived do not compensate for the sacrifice made in other directions.

How to Treat Runners.

The plants should be kept free from runners till after Christmas time. After that, if plants are required for the next season, they may be left and allowed to root all over the plot. By this procedure a grower with half an acre may often add another £20 to his income through the sale of plants. These plants are generally sold at from 18/- to 22/6 a thousand.

When the plants are blossoming for the second crop they throw out long forked arms, upon which the fruit is produced in bunches. It is at this time that the plants begin to bear the greatest number of runners, and consequently the grower has a busy time cutting them off so as to give the berries a chance to attain a good size.

Treatment of Beds After First Year.

All that has been said up to this point concerns chiefly matters incidental to the Strawberries' first year's growth, but if the plot is well cared for it will last for years. Where runners have been left on young beds with a view to sale or planting out, when the plot should be worked or manured will depend a good deal upon when the plants are required. When runners have been kept off with a view to an autumn crop, as soon as that crop is harvested and the winter is over, attention should be directed to the clearing off of all dead leaves and rubbish that would be likely to carry over disease or insect pests to the following season, and to the digging up and manuring of beds.

From the middle of June to the middle of July is a good time for this work. A good dressing of manure should be applied, and dug in with a fork or hoe, so that it may rot down ready for the spring growth. Either blood and bone (10 lb. to the rod), or its equivalent in farmyard manure, or, if sulphate of ammonia is obtainable,, a mixture of this (1 lb.) and blood and bone (8 lb.) may be used. A little more of whichever fertiliser is used may be added during the growing season if there is promise of a big crop, but care should always be taken not to sow blood and bone or any nitrogenous manure too close to the plants in summer time, and whenever such manure is used a good supply of water should be used also. Where vacancies have occurred for any reason they should now be filled.

The Port of Hull.

Our readers' attention is drawn to the advertisement appearing in this issue of the London and North-Eastern Railway, emphasising the importance of Hull as a fruit distributing centre.

A glance at the map of England will at once demonstrate the important geographical position Hull occupies in relation to the Continental trade. Owing to the close business relationship of Hull with the Continent, and the many regular lines of steamers trading to all ports in Northern and Eastern Europe, this port occupies an unrivalled situation for the re-export of the Empire's fruit to Europe.

In the area surrounding Hull there are 13,000,000 people living, and express trains are provided by the L.N.E.R. to carry the fruit direct from the point of landing and sale to inland destinations.

King George Dock is one of the most modern docks in the U.K. It is equipped with electric cranes for the rapid discharge of fruit to quay, railway waggon, transit shed and warehouse.

By loading to railway truck from the ship's side, great saving in cartage, warehousing and other charges is effected. Buyers have free access to the dock for the inspection of fruit before and after sale. Public sales are held three times a week and at other times as required, and are largely attended by the principal buyers from the industrial centres of England, and also from Scotland and parts of Ireland.

Messrs. Burns, Philp & Co. Ltd., 7 Bridge-street, Sydney, are the Australasian agents for the L.N.E.R. Co. Inquiries can be made also from any of their branches throughout Australia.

Blue and Green Moulds of Oranges.

Sources and Methods of Infection, together with a Study of Temperature in relation to Infection Periods.

(By G. B. Tindale, B.Agr.Sc., and S. Fish, M.Agr.Sc., Plant Research Laboratory, in "Journal of Agriculture.")

ONE of the most pressing probems of the citrus industry is the prevention of mould development in citrus fruits. In practice, a considerable time elapses between the picking of the fruit and its consumption. This fruit, after picking, is taken generally to the local packing shed, where it is graded and packed ready for transport to market. It frequently happens that although the fruit appears perfectly sound at the time it is packed, it reaches the market in a mouldy condition. On other occasions consignments may develop mould after a period in cool store or during export. It is well known that an injury of some description, if not essential, is almost invariably precedent to infection by common blue and green moulds. The spores which alight on these injuries may germinate and produce germ tubes which ramify throughout the fruit, causing the mouldy condition. The period from the time the spores alight in the injury until the first sign of the mould (known as the infection period) varies considerably with temperature. With a view to obtaining evidence which might lead to control, an investigation was initiated, and a progress report is given below.

This work included an examination of the sources and methods of infection of blue and green moulds, together with a study of the effect of temperature on the infection period.

An examination was made to see at what stage during the handling of the fruit it was likely to be contaminated with spores of blue and green mould, and it was found that the spores mostly occurred on the grader and in the packing shed.

Work in relation to the methods of spread of blue and green moulds from fruit to fruit showed that both moulds could spread to a sound Orange by contact. In the past it was thought that blue mould only would do this, and for this reason it was generally referred to as blue contact mould.

The logical sequence of the work was then a study of the effect of temperature in the development of the disease. This period was much longer at lower temperatures than at temperatures nearer the optimum. For example, at 78 deg. F. the period was three days, whereas at 38 deg. F. it was 28 days. At the higher temperatures a point was reached where the moulds would not develop, although the Oranges were transferred back to the most favorable temperature; as the result of this work it was seen that the holding of susceptible lines of Oranges for three days at 94 deg. F. offers a means of largely overcoming the problem of blue and green mould in citrus fruits.

Examination of the Sources of Infection.

The method adopted was somewhat similar to that used by M. R. H. Thompson,* which consisted of exposing for five seconds to the atmosphere to be tested, sterile potato dextrose agar in 4-inch Petri dishes. After exposure the Petri dishes were placed in an incubator at 67 deg. F., and the colonies of blue and green moulds which developed were counted.

Location of Exposed Petri Dishes.	No. of Petri Dishes Exposed.	Total No. of Colonies of Blue Mould.	Total No. of Colonies of Green Mould.
Orchard (five orchards examined	36	1	3
Packing shed (three sheds examined)	11	6	4
Dust from graders in packing shed (three graders examined)	3	4	4
Louvre railway trucks (two trucks examined)	6	—	—

The results show that when the examination was made the principal sources of infection were the atmosphere of the packing shed and the dust from the graders.

Methods of Infection.

Preliminary experiments showed that where the rind of an Orange was injured slightly and spores of green or blue mould brushed in, the Orange invariably went mouldy. However, where an injury was made and spores not added, or where spores were brushed on without an injury, the Oranges did not develop mould. In practice the chance of spores gaining an entry to an injury would be very great, especially if Oranges pass through a packing shed contaminated with spores of these moulds.

Method of Spread of Blue and Green Mould from Orange to Orange.

Eight Oranges were taken, and half were inoculated with spores of green mould, and the remainder were inoculated with spores of blue mould. A sound Orange was placed against each of the inoculated Oranges so that contact was made at the point of inoculation. All Oranges were then held under favorable conditions for mould development.

After twelve days, not only had every inoculated Orange become mouldy, but the mould had spread and penetrated each adjacent sound Orange at the point of contact. It was observed that infection of the sound Oranges at the point of contact took place by means of the spread of the white mycelial growth which had developed on the inoculated Oranges. This applied to both blue and green moulds.

Further experiments showed that sound Oranges placed against a mass of spores on a mouldy Orange (not against a white mycelial growth) did not go mouldy.

Twelve Navel Oranges were inoculated midway between the stem and stylar ends with a spore suspension of blue mould and an equal number were similarly inoculated with a spore suspension of green mould. The injury in each case was made 1 mm. deep, and the Oranges placed in beakers over a free water surface, and held at the following temperatures:—32 deg. F., 34 deg. F., 36 deg. F., 38 deg. F., 40 deg. F., 60 deg. F. The relative humidity at all temperatures was maintained not lower than 94 per cent.

The infection period, i.e., the time from inoculation until the first microscopic sign of the disease, was noted and the diameters of the colonies which developed were measured from time to time. The results are given in graph No. 1. This graph shows that at 60 deg. F. the infection periods of both the green and blue moulds were less than seven days,[*] and although the blue mould had apparently been the first to appear, yet the green mould ultimately outgrew it.

At 40 deg. F. the infection period for the blue mould was 23 days, and at least 50 days for the green mould. At 38 deg. F. the infection period for the blue mould was 23 days and 66 days in the case of the green mould. At 36 deg. F. the infection period for the blue was 42 days and 66 days in the case of the green mould. At 32 deg. F. and 34 deg. F. no development took place up to 86 days, when the experiment was discontinued.

The growth rate of the green mould when it appeared was faster at 40 deg., 38 deg., and 36 deg. F., than the growth rate of the blue mould at those temperatures, whereas at 60 deg. F. the difference was not nearly so marked.

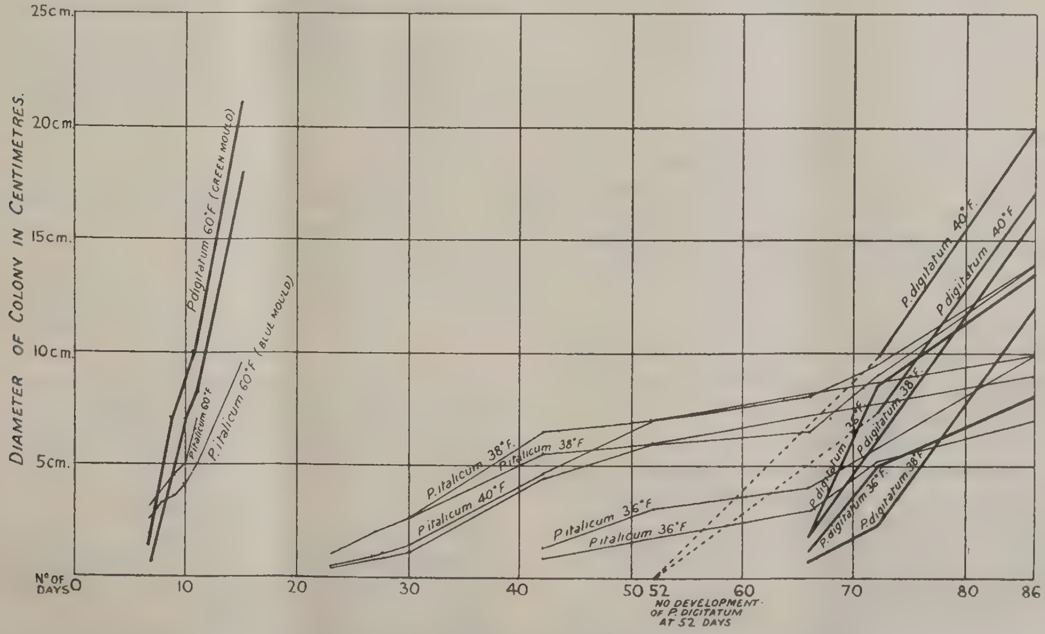
The above data support the view held by Fawcett and Barger[†] that the difference between the rates of growth of blue and green mould in Oranges is greater at lower temperatures. The above shows that at low temperatures there is a longer infection period with green mould than there is with blue mould. Infections which are initiated when the fruit is in cool store behave as shown in graph No. 1. This explains a commonly observed fact with cool-stored Oranges, in that blue mould is more serious during the early stages of storage life, while green mould is more serious during the later stages.

Further temperature studies were made this season in order to determine the infection period over a wide range of temperature conditions. A cut 6 mm. deep was made in the skin of a Navel Orange, and mould spores were brushed into the cut. Two series were included in the experiment—those inoculated with the blue mould spores and those inoculated with the green mould spores. The inoculated Oranges were then placed over a free water surface and held at constant temperatures—38 deg. F., 46 deg. F., 54 deg. F., 63 deg. F., 70 deg. F., 78 deg. F., 86 deg. F., and 94 deg. F. At each temperature there were ten inoculations of green mould and ten of blue mould. The infection period was taken as the time from inoculation until the colony had reached the diameter of 2.5 cm. The results are shown in graph No. 2. It will be seen that the differences between the infection periods of blue and green moulds at temperatures far removed from the optimum are not marked as in graph No. 1; this may probably be accounted for by the fact that in the second experiment the inoculations were deeper than in the first experiment. The results show that at 70 deg. F. and 78 deg. F. the infection period is very short for both moulds, i.e., about three days.

As the temperature is reduced this period is progressively increased until at 38 deg. it is 28 days. At a temperature of 86 deg. F. the Oranges inoculated with blue mould did not go mouldy, but some did when inoculated with green mould, though the growth was very restricted.

After a fortnight at 94 deg. F. none of the Oranges went mouldy even when transferred back to the optimum temperature of 78 deg. F.

Work was then carried out to determine the minimum length of time at 94 deg. necessary to prevent the development of mould in Oranges inoculated with the spores of green or blue mould. The Oranges were inoculated with the spores of blue or green mould, and held for one day at a temperature of 78 deg. F. to enable the spores to germinate and rapidly develop. The Oranges were then held at 94 deg. F. for varying periods of time.



Graph No. 1.—The effect of temperature on the infection periods and rates of development of Blue and Green Moulds in Navel Oranges.

and finally transferred to 78 deg. F. to enable the moulds to grow, should they have merely been held in check at the higher temperature.

Two types of inoculations were made—one in which the injury was 1.5 mm. (termed shallow inoculation) and the other in which the injury was deep enough (9 mm.) to penetrate the flesh of the Orange. Where the inoculations were shallow it was found that two days at 94 deg. were sufficient to prevent 80 per cent. of the inoculations from taking. Three days at 94 deg. prevented 90 per cent. from taking. Five days at 94 deg. were necessary to prevent all shallow inoculations from taking. Where the inoculations were deep, it was found that seven days were necessary to prevent all inoculations from taking. Thus the time factor is probably related to the depth of injury and the thickness of the skin. It was found, however, that the Oranges could not stand more than four days at the temperature of 94 deg. Kept beyond this period they developed a bitter flavor.

In actual practice the type of injury received by an Orange during the ordinary methods of handling must be very shallow, and it is suggested, as a result of these experiments, that holding susceptible lines of Oranges for three days at a temperature of 94 deg. F. offers a means of largely preventing the otherwise subsequent development of green or blue mould.

Summary.

1. An examination of the sources of infection of blue and green mould spores showed that at the time of examination the atmosphere of the packing shed and the dust on the grader were the important sources of infection.

2. It has been shown that both blue and green moulds of citrus may spread to sound fruit by contact.

3. Temperature studies on the infection periods and rate of development of blue and green moulds at low temperatures showed that where shallow inoculations were made, the infection periods of blue mould were shorter than the infection periods of green mould, but when once the green mould appeared it grew faster than the blue mould.

4. A second series of temperature studies with deep inoculations did not show the same differences in the infection periods.

5. It was shown that a temperature between 70 deg.-78 deg. F. is the optimum temperature for infection.

6. It was shown that Oranges inoculated with blue and green moulds, and held for one day at a temperature of 78 deg. F., and then placed at 94 deg. F., behaved, in the case of those with the shallow inoculation, as follows:—

Two days at 94 deg. F. prevented 80 per cent. of inoculation from taking place.

Three days at 94 deg. F. prevented 90 per cent. of inoculation from taking place.

Five days at 94 deg. F. prevented 100 per cent. of inoculation from taking place.

Where the inoculations were deep, it was found that seven days at 94 deg. F. were necessary to prevent all the inoculations from taking place.

7. It was also shown that Oranges will not stand a temperature of 94 deg. F. for more than four days without developing a bitter flavor.

8. It is suggested as a result of these experiments that the blue and green mould development in Oranges may be largely overcome by holding susceptible lines for three days at 94 deg. F.

AN INSECT TRAP FOR SMALL ORCHARDS.

(By "Kay.")

KNOCK THE TOP OFF a kerosene tin and flatten the edges as if making a bucket. In it place about two inches of water and a brick. On the brick, stand a lighted lantern or some similar illumination. Place the trap in position in the orchard and light the lantern every night. On the surface of the water pour a little kerosene. This is in order to kill the insects as they fall from the light. The old-fashioned tallow lamp will be found a bit cheaper than kerosene, although not much is used.

The illumination attracts the insects, such as codlin moth, etc., and when they fall into the kerosene film, they remain there. This trap would, of course, not be practicable for large orchards, but for farm and station gardens will be found invaluable for keeping insects in control.

On one Riverina station garden, where this trap has been in constant use throughout the past season, and where formerly all the fruit was badly affected by insects, in spite of spraying, the fruit this year has been practically wholly free; especially has this been noticeable in the case of codlin, which used to be particularly bad in the Apples and Pears.

OLIVE OIL PRODUCTION IN MEDITERRANEAN BASIN.

According to reports issued by the U.S.A. Department of Commerce, production of olive oil in the Mediterranean basin in 1930-31, will only amount to 560,300 short tons as against 1,340,300 short tons in the previous year. Owing to infestation by the olive fly, the quality of oil being obtained is considerably below average, and the proportion of high-grade oil is comparatively small, while that of medium and low grade oil is large, the report states.

The man who does not advertise is like the man in the dark without a lantern.

HE knows where he is,
BUT nobody else does.

Defeated.

"My word, Mr. Scragg, your wife was outspoken at the monthly meeting of mothers to-day."

Scragg was astounded when given this news by a friend of his wife. "Good heavens!" he exclaimed. "By whom?"

Literature Cited.

*Thompson, M. R. H.—"Further Investigations into the Cause of Wastage in Export of Citrus Fruits from South Africa."—Bull. No. 1, p. 5. 1921.

†Fawcett, H. S., and Barger, W. R.—"Temperature and Citrus Fruit Decay Caused by Fungi."—"Journal of Agricultural Research," Vol, 35, No. 10, p. 931. 1927.

The Handling of Citrus for Export.

Recommendations of the Citrus Preservation Committee of the Council for Scientific and Industrial Research.

IN THE NEAR FUTURE the production of citrus fruit in Australia is expected to be very considerably greater than the quantity required for local consumption, and that efforts are accordingly being made to build up an export trade on a large scale.

In view of the necessity for the fruit to be in a satisfactory condition if the export trade is to be a success, the Citrus Preservation Committee of the Council for Scientific and Industrial Research, has drawn up recommendations for the procedure to be followed in the handling of this fruit.

These recommendations embody the results of the experimental work of the Committee and of the experience of its members. As the Committee is made up of members who are concerned with the growing, transport, and marketing or Oranges, as well as of scientific workers, every aspect has been taken into consideration.

As they are intended for the guidance of all those who are in any way likely to be concerned with the production and export of citrus fruit, we have pleasure in publishing the recommendations hereunder:—

a. **Regulations affecting Export.**—All fruit must comply with the regulations under the Acts dealing with the overseas export of fruit and in particular those relating to the control of the quality and the grading of the fruit, the type of case and the markings on the case.

b. **Type of Fruit.**—In view of the fact that the regulations set out in detail the type of fruit permitted for export, there is not much that can be added under this heading. It is only necessary to emphasise that only first quality fruit should be sent. The harmful effect on the trade would be very great if sour or immature Oranges were included.

c. **Methods of Handling in Grove.**—During all operations it is most important to avoid injury to the rind. All experiments have definitely pointed to the necessity for great care in the handling of the fruit. Considerable loss is produced by mould infection following damage to the rind, and this damage can be prevented by careful handling in the following manner:—

(1) Gloves should be worn during all operations of harvesting, grading and packing.
(2) Under no circumstances should the fruit be pulled from the tree.
(3) Blunt-nosed clippers should be used, and in the actual cutting of the fruit the greatest care must be taken that no protruding stalk be left. It may be necessary to make a second cut in order to remove any superfluous wood.
(4) No fruit resting on the ground or hanging within a foot from the ground should be used for export.
(5) The fruit should not be harvested in damp weather.
(6) Picking bags are not recommended as the ideal receptacle because in a bag the Oranges are liable to be rubbed together and the rind bruised by the movements of the packers. . It is strongly recommended that growers make an effort to provide the pickers with a box of the capacity of half a bushel; the box should be well padded inside and have straps for hanging across the shoulder.
(7) Care should be taken to see that the fruit is not dropped, but transferred from one receptacle to another with the same care as would be given to eggs. If any Orange is accidentally dropped or mishandled in any way during the operation, it should be immediately rejected, as otherwise it may be the means of ruining a whole case of fruit.
(8) The most suitable type of field box is the box used in the canning industry, namely, a kerosene case cut open on one side with cleats nailed to each end for ease of handling.
(9) Care should be taken to see that the field boxes have no inner surface projections of any kind; there should be no nails, protrusions of wood or sharp knot holes, all of which are liable to cause injury to the rind.
(10) If the weather is dry and warm, sweating in a well ventilated shed is recommended for a period of up to seven days. Under moist conditions, however, sweating will be quite ineffective and therefore is not advised, unless some chamber in which atmospheric conditions can be controlled is available.
(11) In transporting the fruit from the grove to the shed, care should be taken to pack the boxes squarely on top of each other, and the truck should be driven carefully so as to minimise the shaking as much as possible.

d. **Packing House Methods.**—The importance of scrupulous cleanliness in the packing sheds and of all parts of the machinery used cannot be over emphasised. To ensure this, the following precautions should be taken:—

(1) Old fruit should not be left lying about. All mouldy or damaged fruit should be removed from the shed and destroyed.
(2) The grading machine should be sprayed daily with a formalin solution of 1 part of 40 per cent. commercial formalin to 20 parts of water.
(3) Where practicable the whole of the shed should be sprayed at intervals with this solution. The floor in the vicinity of the packing operations should always be regularly sprayed.
(4) Gloves should be worn during all sorting, grading and packing.
(5) It is important that the grading machine should be free from all rough, sharp edges or projections, or surfaces which might injure the fruit.
(6) It is essential that the fruit should be carefully culled and that any which shows marked signs of blemish should be rejected. Off type fruit should be rigorously excluded.
(7) Dirty fruit should under no circumstances be exported. Cleaning may necessitate washing and polishing and unless the proper facilities exist for efficient washing and quick drying of the fruit, washing should not be attempted, and all dirty fruit should be discarded.

Where proper facilities for washing exist, the sodium bicardonate treatment is recommended, as it is beneficial for reducing the decay due to moulds. This consists in immersing the fruit in 5 per cent. sodium bicarbonate for eight minutes at temperatures of 112-120 deg. F., and drying on towel dryers.

A full description of the methods was published in the Council's Journal, Vol. 3, No. 2, May, 1930, copies of which may be obtained from the Secretary, Council for Scientific and Industrial Research, 314 Albert-street, East Melbourne.

For efficient drying after this treatment, loose towels should be placed on the fruit as it passes over the revolving towel dryer. The revolving towel soon becomes so wet that it does not dry the fruit, but merely removes the excess of moisture. If dry towels be tacked on the machine so that they rest loosely on the fruit the efficiency of the apparatus is increased enormously, and the fruit can be actually dried. These loose towels which should be made to fit the machine need to be changed and dried as soon as the condition of the fruit points to the necessity.

(8) Only export citrus cases (23 x 11½ x 11½ inside measurements clear of a division) should be used. The space between the side boards must not be more than ½ inch. Each case should be dressed particularly on the inside, and be free from projecting nails, loose splinters, or anything that might injure the fruit.

(9) In packing, great care should be taken to see that the fruit is to the correct height in the case in order that "lidding" can be carried out without damage to the fruit. The use of box guards on the middle division piece and round the inside is recommended during "lidding" in order to prevent injury.

(10) The experiments of the Committee have not as yet gone far enough to recommend a definite method of wrapping. It is considered, however, that wrapping in an attractive paper is advisable in that it enhances the selling qualities very considerably.

e. **Transport by Rail.**—The cases should be carefully packed in a railway truck in such a way that undue movement is prevented. They should be stacked on end, and for preference should be battened, but if battening is impracticable the cases should be stacked in such a way as to prevent as much movement as possible. Cleanliness in the trucks is as essential as in the packing sheds.

f. **Pre-cooling.**—Broadly speaking, all fruit consists of living matter and materials which have been stored up in the fruit during the period of growth on the tree.

After the removal of the fruit from the tree, the living matter is dependent for its maintenance upon the materials stored up, and when these are used up the fruit dies.

The life of the Orange, therefore, is limited, depending upon the quality of stored material, and on the rate at which this material is used up.

The vital activity of the fruit depends upon its temperature, increasing with rise of temperature at an accelerated rate, and the object of storage at a low temperature is to reduce its rate of living and so prolong the life of the fruit.

This using up of stored material is accompanied by actual production of a proportional quantity of heat, and so if the fruit be loaded hot into the ship's hold, the refrigeration machinery has to remove not only the heat already in the fruit, but also heat which is constantly being produced. It may, therefore, be some time after loading before the temperature at which it is desired to carry the fruit is attained throughout the stack. This means that the life of much of this fruit is shortened.

All fruit should therefore be pre-cooled to 40 deg. F. before being loaded into the ship, since pre-cooling lowers the rate of living, and thereby lengthens its life.

As Oranges have only a limited life it follows that all time taken up after picking, sweating, packing, etc., is so much time taken off the storage life of the fruit, which really starts when the fruit is removed from the tree.

It is, therefore, essential that the fruit should reach the precooler as soon as possible after picking, so that the vital activity, and therefore the reduction of its stored material, is reduced to a minimum.

g. **Ship Transport Conditions.**—The temperature of storage on the ship should be 38 deg., and the holds should be subject to periodical ventilation.

General Instructions.—It has already been stated that the life of the fruit from the time it leaves the tree is strictly limited and any unnecessary delay between the time of harvesting and the time of sale means a shorter time during which it will be in good marketable condition.

It is, of course, manifestly impossible to make arrangements for a shipment of any size without at least some of the fruit having been harvested earlier than the rest. As, however, the process of decay is very much slower when once the fruit is in cool storage, it is essential that the actual processes of harvesting, washing, packing, and transport to the cool stores must be managed as expeditiously as possible. If the fruit must be held for some time before shipment it should be held in cool store, and not in the packing shed.

Personnel of Committee.

The personnel of the Citrus Preservation Committee of the Council for Scientific and Industrial Research, is as follows:—

W. J. Young, D.Sc., Associate Professor in Biochemistry, University of Melbourne (Chairman); W. D. Bracher, Superintendent of Refreshment Rooms, Victorian Railways; Captain D. Halhed, Victorian Central Citrus Association; G. E. Kitchin-Kerr, Victorian Central Citrus Association; J. Hepburn, Works Manager and Chief Engineer, Government Cool Stores, Victoria Dock, Melbourne; F. M. Read, M.Agr.Sc., Department of Agriculture, Victoria; W. Ranger, Committee of Direction of Fruit Marketing, Queensland; E. Archer. M.Sc., Council for Scientific and Industrial Research (Secretary).

Howe'er it be, it seems to me
'Tis only noble to be good,
Kind hearts are more than coronets,
And simple faith than Norman blood.
—Tennyson.

Consign your Fruit to—
J. JAEGER
Telegrams: Jaegagento, London.
FRUIT IMPORTER
18 Bedford Chambers, Covent Garden
London, W.C.2.,
and compare the results with those of the competition.
Try and See.
AGENTS REQUIRED.

New South Wales.

FRUITGROWERS' FEDERATION OF NEW SOUTH WALES.

At the April meeting of the Board of the N.S.W. Fruitgrowers' Federation, there were present:—General J. Heane (in the chair), Messrs. T. A. Tester (Young), Bert Moore (Gosford), Alex. Smith (Freeman's Reach), R. Hill (Narara), W. W. Challis (Kentucky), A. J. Taylor (Singleton), J. Neil (Glenorie), F. D. Inman (Leeton), H. G. Such (Griffith), A. E. Herring (Batlow), P. S. Macdermott (Market Representative), E. E. Herrod (Secretary). Mr. C. G. Savage was also in attendance.

Market Representative.—Mr. P. S. Macdermott tendered his resignation from the position of Market Representative of the Federation to take effect as from April 30. After the chairman and a number of members of the Board had expressed regret that Mr. Macdermott was severing his connection, it was decided that the resignation be accepted. In view of the near approach of the Annual General Conference, consideration of the position was left in abeyance.

Federal Citrus Council.—The President submitted a report, which was adopted.

Special Shipment to Hull.—The Board had under consideration at its previous meeting a recommendation that the Federation should contribute £100 to reimburse Mr. Broadfoot for the expenses incurred by him when accompanying the special shipment to Hull last year, as Mr. Broadfoot had remained in England for a longer period than that allowed for when making the original arrangements. Owing to unforeseen circumstances, which delayed the vessel, and other conditions which rendered it advantageous to extend the period in which the shipment was placed on the market, Mr. Broadfoot found it necessary to remain longer than the time allowed in order to complete his investigations, and had to bear his own expenses during this extra time. After discussion, the Board decided to make a special application for a grant of £100, less whatever amount might be subscribed by the Batlow Packing House, and that such sum be paid to Mr. Broadfoot.

Bud Selection Society.—The Secretary reported for information of members that the following buds were supplied to nurserymen this year by the co-operative Bud Selection Society Ltd., the total being double that of last year.

Sugar Inquiry.—The Secretary reported having received information that the Sugar Inquiry Committee was submitting majority and minority reports, and that the majority report would contain recommendations for a continuance of the embargo and fixed prices, but that special concessions of a substantial nature should be made to the fruit industry. The minority report favored a continuance of the embargo and a slight reduction of prices all round. In anticipation of the matter being dealt with by the Government communications had been addressed to the N.S.W. representatives in the Federal House, urging them to support the adoption of the majority report.

Arbitration Bill.—Correspondence was received from the Select Committee of the Legislative Council asking the Federation to appoint a representative to place the views of the Federation on the proposed Arbitration Amendment Bill before the Committee, and it was decided to refer the matter to the Employers' Association.

Export Regulations.—Correspondence from the Batlow Packing House relative to the conditions of the inspection of Apples for export was received, asking particularly for the Federation to induce the Government to have the fruit inspected in the district in which it is produced.

It was decided to ask the Department of Agriculture to investigate the possibilities of having fruit intended for export inspected in the district in which it is produced.

Victorian Tomatoes.—The market representative reported that consignments of Portland Tomatoes commenced to arrive at the end of February, but that no appreciable quantities were received until about the middle of March. Up to March 31 the total of all Portland Tomatoes received in Sydney was 5,985 bushel cases, and 1,547 half cases. Consignors were not all members of the Portland Tomato-growers' Association, so that the quantity that the Federation will receive from the levy of one half-penny per case is not yet definitely known, but is being ascertained.

The time occuplied in supervising would not average one hour per day up to the middle of March, since then it has taken approximately two hours per day to do the necessary work.

Fruit Fly.—Correspondence from the Department of Agriculture was received, stating that owing to the prevalence of fruit fly, consideration is being given to altering the fruit fly regulations to make the application of

Nurserymen.	Washington Navels.	Valencia.	Emperor.	Eureka.	Marsh.	Total.
L. P. Rosen & Son	8,000	11,000	2,000	2,000	2,000	25,000
T. Adamson	2,000	2,000	7,000	1,000	500	6,200
Swane Bros.	1,000	1,000	250	500	500	3,250
George McKee	1,000	2,000	—	—	—	3,000
C. Langbecker	—	750	—	—	250	1,000
F. Ferguson & Sons	2,000	3,000	—	—	—	5,000
A. T. Eyles	3,000	2,000	—	—	—	5,000
R. Hughes	500	500	250	500	500	2,250
Hosking & Hollinger	100	100	—	—	—	200
A. E. Herd	100	100	—	—	—	200
	17,700	22,450	3,200	4,000	3,750	51,100

foliage poison spray for the control of fruit fly compulsory in those districts where this pest is known to exist; also asking for the opinion of the Federation.

It was decided that in view of the serious nature of this pest, and of the evidence before the Board, that it is becoming worse, the Board is in favor of the proposal outlined in the Department's letter.

FRUIT FLY IN N.S.W.

Abnormal Prevalence Causing Concern.

THE INCREASING SPREAD of the fruit fly pest in N.S.W. is viewed seriously by officers of the Department of Agriculture.

The proposal to alter the regulations to provide for compulsory treatment is approved by the Board of the N.S.W. Fruitgrowers' Federation.

The proposal is to make the application of foliage poisonous spray for the control of the pest compulsory in those districts where it is known to exist.

OBITUARY.

The death occurred at Orange (N.S.W.) last month of Mr. Henry Buckland, of Bletchington, aged 86, one of the best-known orchardists of the Orange district.

CITRUS TREES IN N.S.W.

Quality Gives General Satisfaction.

THE QUALITY and cleanliness of citrus trees produced in New South Wales is giving general satisfaction to growers. Some comment has been created by a paragraph in the April "Fruit World" written by the Queensland correspondent, suggesting that brown spot was introduced into Queensland on trees from N.S.W. nurseries.

This is not admitted from N.S.W. One of the leading citrus nurserymen writes as follows:—

"Certainly the report states that the trees were from 'southern' nurseries, but as New South Wales is the only State which is likely to forward citrus trees, we feel sure that the matter is only an oversight on your part, and will be contradicted in your next issue.

"Brown spot, as no doubt you are aware, is all over Australia, and was in Queensland long before it was ever heard of in New South Wales.

"As this is a district where we do quite a quantity of business, you will understand this damaging statement is a very serious one as far as we are concerned."

* * * * *

At the Interstate Citrus Convention held at Mildura recently, officers of the N.S.W. Department of Agriculture spoke in terms of appreciation regarding the ability and integrity of the nurserymen of N.S.W. who produced citrus trees.

CITRUS FRUIT EXPORT.

Californian Export Case.

In order to clear up any confusion existing with regard to the internal dimensions of the citrus export (Californian) case, the V.C.C.A. advises the sizes are 24in. x 11½in. x 11½in.: growers should ask suppliers to submit specifications, before cutting, to the export inspection officers in their respective States.

FEDERAL CITRUS COUNCIL.

Report by President of N.S.W. Fruitgrowers' Federation.

THE PRESIDENT of the N.S.W. Fruitgrowers' Federation (General J. Heane), attended the meeting of the Federal Citrus Council, in Melbourne on February 26, 27 and 28. The following is his resume of the business transacted.

Maturity Standard.—Although considerable data was now available through the Departmental Officers of N.S.W., and officers of some of the other States, it was not practicable to indicate definite conclusions, and it was therefore decided to endeavor to arrange for the Departmental Officers to meet in a round-table conference at the time of the next meeting of the Council.

Dry Oranges.—It was decided to ask the Departmental Officers of the several States to report on the present and suggested standard for dry Oranges and Mandarins.

Affiliation With the Council.—I intimated to the Council that the Federation would probably accept affiliation on a nominal payment of £10/10/- towards Federal costs, and that an effort should be made to form another Citrus Association.

Council Finance.—The retirement of the Central Citrus Association of N.S.W. necessitated a review of the financial position. The contribution by this Association to Council funds has been on the basis of a minimum payment of £100 yearly, or one penny per case, whichever is the greater amount, on all fruit marketed in Melbourne through the accredited agents of the Council. Assuming that the M.I.A. and New South Wales Federation subscriptions will be available for Council functions as distinct from marketing, the difference between that amount and the total payment by the C.C.A. will require to be made up by the Victorian and South Australian Associations.

Considerable discussion ensued, representatives of the two organisations emphasising the extra demand upon their financial resources as a result of the phenomenal season's operations.

Each State's representatives submitted suggestions to meet the peculiar position created, and it was resolved—

> "That the following schedule of expenses for the ensuing year be agreed to by the two States, and that the basis of contribution be a pro rata rate, according to the quantity of fruit marketed by both States through Association channels; the final amounts payable to be adjusted at the close of the season; but for the time being the Market Manager's estimate of arrivals, 220,000 cases from Victoria and 175,000 cases from Victoria, are regarded as the basis of calculation in determining the relative proportions payable by each State; also that these contributions shall be reduced as the result of any levies which may be received from other sources."

The following is the schedule of expenses referred to—

Market Manager	£500	0	0
Secretary	186	0	0
Typiste	130	0	0
Accountancy	52	0	0
Telephones, telegrams postages, stationery, and sundries	100	0	0
	£1,020	0	0
Less N.S.W. contributions	60	10	0
	£959	10	0

NEW SOUTH WALES.

Citrus Fruit.

Review of Crop Conditions.

THE FOLLOWING SURVEY of the conditions prevailing early in April, in the citrus orchards of New South Wales, including those within the Murrumbidgee Irrigation Area, is based upon reports received from Fruit Inspectors and 38 Group Corespondents:—

Gosford.—Ample moisture has caused splendid growth in the trees and the fruit is developing well. Prospects indicate fruit of good size and quality. The main crop promises well and generally is stated to have good yield prospects. The Mandarin crop is light. Good to heavy crops of Lemons are in sight.

Wyong.—The Navel crop is developing well. Valencias show a good crop, and Common Oranges from fair to good. The main crop of Lemons is stated to be good, but the prospects for the summer crop are not too promising.

Windsor.—Groves showing good growth. Fruit has developed most satisfactorily. The marketing of Navel Oranges will shortly commence. On the uplands the Valencia crop is stated to be light, but on river flats better prospects prevail. The Mandarin crop on young trees shows good promise, but on old trees the fruit is backward. A good crop of Lemons is in sight.

Richmond-Kurrajong.—Navels growing well. It is expected the fruit will be larger than usual, and the crop yield about average. Development of the Valencia crop is satisfactory. Good quality Common Oranges are in evidence generally; the fruit is well grown and has cropped heavily in parts of this district. The Seville crop is of good quality, and up to the average yield. The Mandarin crop is patchy; trees which bore heavily last season have not yet recuperated and have cropped lightly, but on young trees a good crop is being carried. Bloom on Lemon trees is showing freely, and trees are really now carrying three different crops.

Hills District.—Favorable weather conditions have resulted in splendid growth as regards both fruit and trees. The Navel main crop is generally light, due to a heavy shedding early in the year. Splendid development of Valencias and Common Oranges is reported. The latter are clean, and the fruit is large; generally the quality promises to be good.

Most of the summer crop of Lemons is harvested; the main crop is growing well.

Hawkesbury.—Generally satisfactory development in all citrus fruit is taking place over this area: Navels coloring.

Hunter.—The Orange crops are well grown and clean, but prospects generally are for light yields. The Mandarins are lightly cropped and in parts the fruit is undersized. Lemon trees are showing a good bloom in the Copeland area, but the main crop is very light. A fair quantity of summer Lemons remains to be marketed. There is a good average crop of Lemons in the Moorland district.

Penrith.—The Orange crops are in good condition. Navels promise medium yields of good size and high quality fruit. There is no intermediate crop. The Common Oranges have good crops of clean fruit. Mandarins show promise of maturing some weeks earlier than last year. The yields are light but quality is good.

Seven Hills.—Fruit on young Valencia trees is large, but on older trees it is inclined to be small. Common Oranges and Mandarins have developed well.

Narromine.—Good rains have been received over citrus growing areas in this district. Navels are showing very well and are promising in regard to both quality and quantity. Valencia and Common Oranges are only lightly cropped. Average crops of Mandarins and Lemons anticipated.

Forbes.—Grasshoppers were responsible for damage in this district, some trees being denuded of foliage, thus causing the fruit to fall, but the recent heavy rains have produced an improvement in tree growth. The Navels are very clean and give indications of maturing into choice Oranges. Valencias and Common Oranges show signs of improvement since the rains, but crops will be light.

Murrumbidgee Irrigation Area.—Heavy rains were beneficial to citrus crops. The bulk of the Navel crop will be of good size and quality. Yields will be moderate on the average. The Valencia crop is light generally.

At Yenda the Lemon crop is light, the trees not having yet recovered from the frost of 1929, but in other parts of the area the prospects are for good to heavy crops.

A. A. WATSON, Director of Marketing.

Sydney, April 2, 1931.

Fruit Shipments
United Kingdom
and the Continent
W. D. PEACOCK
& CO.
London Fruit Exchange,
Spitalfields, London, E.1.
AND HOBART, TASMANIA
Solicit Consignments
The High Standing and Long Experience of this Firm is a Guarantee that the Best Interests of Consignors will be conserved.

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Fruit & Vegetable Salesmen
Commission Agents
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Highest Market Rates Assured
Prompt Settlements

"YARRA"
QUICK BREAKING
White Oil Emulsion
Easy to mix, Effective in result,
Economical in quantity.
Use Now
On Citrus Trees.
PARSONS & JAQUES
Manufacturing Chemists,
6 Patterson St., 155 Yarra St.,
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Tasmanian Agents—
N. L. HOPKINS, HOBART.

Sulphate of Ammonia

WESTERN AUSTRALIAN TESTIMONY

Mr. S. E. Hambley, of Mount Barker, Western Australia, writes as follows:—

"I have an orchard composed of 900 apple trees, and two acres of mixed stone fruits. On these I make a practice of applying 2 lbs. per tree of Sulphate of Ammonia in conjunction with Super and Potash, and I have no hesitation in saying that the Sulphate of Ammonia is the most important portion of the fertilisers applied. Two acres of Dunn's Seedling, 1929 season, yielded 928 cases of Standard Export Fruit.

"I also use Sulphate of Ammonia on my oats, peas and kitchen garden crops, and the vigour and yield demonstrates always the value of this fertiliser.

"You are at liberty to use this letter as you feel disposed."

Evidently Mr. Hambley, like many primary producers throughout Australia, knows a good thing when he sees it, and is satisfied that ——

SULPHATE OF AMMONIA PAYS

Literature and Advice from:—

NITROGEN FERTILISERS PROPRIETARY LIMITED,
360 Collins Street, Melbourne,
or Box 235, Haymarket, Sydney.

Sidelines on the Orchard and Farm.

Sheep - Cows - Pigs - Poultry - Gardening.

Some Practical Hints.

THE VALUE OF SIDELINES on the farm and orchard was dealt with at a recent meeting of the Kilkiwirra Branch of the Agricultural Bureau of South Australia. Mr. Coombs read a paper, in which he stated:—

Sidelines are as necessary as crop growing.

I place sheep first because they are useful in so many ways. They provide a considerable amount of revenue, help to keep weeds of many descriptions in check, provide the house with meat, and assist considerably with the fallows in regard to packing. I recommend keeping ewes. There is less risk with them than with dry sheep. I favor the Corriedale breed for this country, and would suggest crossing with either Dorset Horn or Shropshire. Both these breeds give a good lamb that will grow fast and is well liked by butchers. Endeavor to have sheepproof fences before going in for sheep.

Cows are essential for convenience and comfort for the house and the ladies therein. Jerseys are favored because they keep the supply of butter going for a much longer period than the larger breeds. The latter have many admirers and supporters. For these breeds most farmers emphasise the value of the calves for butchering and the amount of butter they will make in the flush period of the year. I am not in favor of keeping a lot of cows unless the farmer has a large family of girls to attend to them.

Another point in favor of larger breeds over the Jersey is that when a cow has got to the stage when it is not profitable for milking they have a higher monetary value. This, however, is not so high as it would at first appear. If the amount of food consumed during the life of both breeds over a period of, say, 10 years, is taken into consideration, I think that the Jersey will show to have been more profitable. The Jersey is not a delicate breed and will hold its own with most of the other breeds.

If cows are kept, pigs will be found necessary. I have been keeping a Duroc boar for two years now, and find them very satisfactory. They keep in better condition during the growing period, are more contented, and easily kept in the sty. I feed barley as the main food, and they are always supplied with whole corn. I use a petrol drum split in halves lengthways and let it in the ground a little way to stop it from rolling over. The best method is to crush the barley and keep it in a self-feeder so that the pigs can help themselves. I keep most of the pigs until they are about 160 lbs. to 180 lbs. live weight.

Fowls are another of the sidelines managed by the ladies. They are easier handled and more profitable than cows. I favor one of the larger breeds of fowls, but if eggs are the main object, then the White Leghorn is not excelled. The larger breeds are more saleable when they have served their term of laying. They can be kept out of the garden, haystack, and farm machinery, and generally lay better during the winter months. The above remarks apply chiefly to an egg-laying strain. I strongly advise every farm homestead to have a kitchen garden. If a record is kept it will prove itself profitable, and vegetables grown on the property are much better than those that are purchased.

* * * * *

Vegetable Culture Also Recommended.

On this same subject of sidelines, Mr. Johncock, of Netherton, S.A., recently submitted the following views:—

Sidelines such as cows, fowls, kitchen garden, and pigs should prove of very valuable assistance to the household expenses to the man who was just starting on a new block.

Cows were essential

on every farm, especially where there was a family. Six good cows would produce on an average £90 worth of produce. In the Netherton district it would be necessary to hand feed for six or seven months of the year. Each cow would require 20 lbs. of chaff per day, and for the remainder of her fodder should be able to obtain sufficient roughage in the paddock.

A paddock of about 24 acres sown with 20 lbs. of wheat, 30 lbs. of oats, and 90 lbs. of super should provide feed for six cows from early June until the end of the year. A cow eating 20 lbs. of chaff per day would consume 1¾ tons of chaff, at £3 per ton, £5/5/- per cow—for six cows equals £31/10/-; 8 bushels wheat at 4/- equals 32/-; 15 bushels oats at 2/6 equals 37/6; 1 ton farm feed £3; 1 ton super £5—£36/19/6. Produce from cows £90; balance £50/0/6. Sale of five calves at £3 each, £15—total £65/0/6.

Fowls.—He recommended the White Leghorn. Twenty-five bags of wheat would feed 100 laying hens during the year if birds were allowed free range on the farm; 100 hens should produce £40 worth of eggs each year, less 25 bags of wheat at 12/- per bag equals £15, leaving a profit of £25.

It was difficult to give an estimate of the value of the kitchen garden. Where sufficient water was available practically all kinds of vegetables could be grown.

Pigs.—Three pigs could be fed on the waste milk from six cows, and with 6 bushels of pollard to top off each pig the animals could be used as fresh pork, cured for bacon, or marketed. A pig at five to six months of age should weigh 130 lbs.; market value about £4 each pig equals £12. Cost of feeding, 18 bushels pollard at 1/9 equals 31/6, profit £10/8/6.

Replying to questions, Mr. Johncock said the hens would lay better without running with the roosters if they were locked up. Mr. Wilkin said that sheep kept for rations could be classed as a profitable sideline.

CALIFORNIA'S ASPARAGUS INDUSTRY.

A recent issue of "Citrus Leaves" states that in 1930, Southern California planted 51,000 acres of canning asparagus that produced 71,400 tons, bringing a total value of $5,633,000, and 10,920 acres of table asparagus, which yielded 1,791,000 crates of 24 lbs. each, valued at $3,976,000. In 1929 there were 49,400 acres of canning asparagus raised, yielding 74,100 tons, which brought $5,884,000. The acreage of table asparagus in 1929 was 10,780 acres, which produced 1,078,000 crates (24 lbs.), at the valuation of $2,889,000.

Swane Bros., Enterprise Nurseries, Ermington, N.S.W., have forwarded their catalogue of fruit trees, Roses, etc. Fruit trees include citrus, also Apples, Apricots, Almonds, Cherries, Figs, Nectarines, Peaches, Plums, Prunes, Pears, Loquats, Mulberries, Gooseberries, etc. Catalogue is posted free on application.

New Zealand

UP to the middle of March the New Zealand export of Apples and Pears totalled 406,182 cases. This is estimated to be about one-third of the New Zealand export crop for this season.

Of the foregoing total, 27,136 have been sent to South America. The total quantity to be shipped to South America this season is around 80,000 cases. The varieties shipped are as follows:—Delicious and Jonathans in ex. fancy and fancy grades; Rome Beauty in ex. fancy grade only.

Negotiations are in progress for withdrawal of the 3/- per case duty. It is anticipated that the selling price will be high enough to cover the disadvantages of the duty and advance exchange and return to the grower a satisfactory price.

The New Zealand Fruit Export Control Board has been successful in contracting sales in Canada for approximately 16,000 cases of Delicious and Jonathans.

HAWKE'S BAY INDUSTRY RECOVERS.

A note of confidence is struck because of the rapid recovery in the Hawke's Bay district, which recently suffered from devastating earthquake.

There is no grumbling against the grievous harm that all have suffered. Thoughts and conversation are directed towards the job of re-establishment of homes, property and industry.

FRUIT RESEARCH.

FOR MANY YEARS past investigations connected with fruitgrowing, fruit production and transport have been conducted by private individuals, the Horticulture Division of the Department of Agriculture, and Cawthron Institute. The development of a sound export trade in fruit in more recent years, particularly during the past decade, contemporaneous with advances made in the scientific technique of every aspect of fruit production and handling, have emphasised the need for more attention being given locally to fruit research.

Realising the need for this, discussions have been proceeding for a considerable period between those interested, and ultimately a programme of investigation was drawn up, agreed upon and forwarded to the Empire Marketing Board, with an appeal for financial assistance to make the programme possible. In April last the Board advised that it was prepared to make a capital grant of £2,000 and further to provide the sum of £1,500 per annum for five years for the purpose of maintenance of research work. This grant was supplemented by the New Zealand Fruit Export Control Board's generous action in making available a further £1,250. Further assistance was provided by the Government, so that a total of £4,500 appears on the vote of the Department of Scientific and Industrial Research for the purpose of fruit research for the financial year of 1930-31.

In order to deal with the scheme, the Council of Scientific and Industrial Research, under whose control it has been placed, has established an Advisory Committee, representative of all those bodies interested in the fruit industry. The personnel of the Fruit Research Committee is as follows:—N.Z. Fruit Control Board, Mr. J. L. Brown (Chairman of the Board) and Mr. F. Firth; N.Z. Fruitgrowers' Federation, Mr. T. C. Brash and Mr. W. J. Rodger; Cawthron Institute, Prof. T. H. Easterfield and Mr. T. Rigg; N.Z. Institute of Horticulture, Mr. F. S. Pope; N.Z. Horticultural Trades Assn., Mr. T. Waugh; Department of Agriculture, Mr. A. H. Cockayne and Mr. J. A. Campbell; Council of S.I.R., Mr. H. Vickerman and Mr. G. Shirtcliffe.

All matters affecting fruit research in New Zealand will be dealt with by this Committee, which will formulate the policy and guide the progress of the investigations, co-ordinating the activities of all engaged thereon.—"The Orchardist of N.Z."

FIRE BLIGHT IN NEW ZEALAND.

The discovery of fire blight in Christchurch orchards has proved alarming from the fruitgrowers' point of view. It was hoped that the disease could have been confined to a limited area in the North Island, but the fact of this dreaded disease having been found in Christchurch is generally regretted.

Later.—Advices to hand from the Department of Agriculture state that the attack is not widespread, and it is hoped with the co-operation of growers to soon have the disease under control.

There have been no fresh outbreaks in other parts of the Dominion.

Vegetable Culture

Sow seed of **Broad Beans** as early as possible this month in good loamy soil, and providing the ground is in good condition, no manure is necessary; but if the soil be poor, good applications of well-rotted manure are beneficial. **Leviathan Long Pod** and **Broad Windsor** are both reliable sorts. **Cole's Prolific**, a dwarf variety, growing only 2 feet high, is another heavy cropper, with a robust constitution and a delicious flavor.

Early dwarf **Peas**, such as **Green Feast**, **English Wonder** and **Wm. Hurst**, should be sown now. **Day's Early Sunrise** is another reliable variety, in fact, it is the hardiest for growing in winter. It is taller than the other varieties mentioned, growing 2½ feet in height, and requires staking or branching to keep the foliage above the ground during wet weather.

Make large sowing of **Onions** now. **Brown Spanish** and **Ailsa Craig** are recommended. The seed should be sown in soil of a heavy loamy character in good condition, and possessing plenty of well-rotted manure in its composition.

Although the sowing now of **Carrots** and **Parsnips** is not generally advocated, a small sowing of each may be made for use in soups and stews during spring.

For **Turnips**, no better variety may be sown than **Non-seeding White**, and although **Orange Jelly** is usually considered a summer variety if sown now will do exceedingly well during the cold months. A good deep, rich but light soil should be selected for Turnips, but heavy manuring is not advisable as it inclines the roots to coarseness, and the tops to rank growth.

Seedlings to plant out this month include **Cabbage**, **Savoy**, **Cauliflower**, **Brussels Sprouts**, **Borecole**, and **White and Brown Globe Onions**.

Plant roots of **Herbs**, **Horse Radish**, **Asparagus** and **Rhubarb**, also **Strawberries**.

Sets of **Potato** and **Tree Onions**, **Shallots** and **Garlic** may still be planted.

Canned Fruit Export.

The export of the 1931 pack of canned fruit is now in full swing.

For the official records the export of the new season is reckoned as from March 1. From that date up to April 11, the exports are as follows:

Apricots, 11,066 cases; Peaches (halves), 43,286 cases; Peaches (sliced), 45,907 cases; Pears, 34,284 cases. Total, 134,543 cases. Each case contains two dozen cans.

From present particulars it would appear that the 1931 pack is a good deal smaller than that of last year.

CANNING EQUIPMENT.

Attention is directed to the advertisement of the Austral Otis Andebar Cannery Equipment Pty. Ltd., appearing in this issue. This company is really the Australian House of Messrs. Anderson Barngrover Mfg. Co., of California, the well-known suppliers of all classes of canning and processing machinery. The Austral Otis Andebar Co. is jointly owned by Messrs. Anderson Barngrover Mfg. Co., and the Austral Otis Engineering Co. Ltd., of Melbourne, the well-known general engineering firm. This combination assures a canner of being kept in touch with everything that is latest in fruit machinery in America, also with any mechanical improvements which may have come out in this country. Besides handling Anderson Barngrover's products they also hold the sole agency for the Continental Machine Co., which embraces such well-known firms as Troyer Fox Mfg. Co. and McDonald Machine Co. These two firms are recognised as being the leading manufacturers of can-making machinery in the world. The Fred H. Knapp Corporation, Langsenkamp Co., and the Hansen Canning Machinery Corporation are also represented by them. Recently the Sprague Sells Corporation joined up with the Food Machinery Corporation and, therefore, their interests are attended to throughout Australia by the Austral Otis Andebar Co. It will thus be seen that these people are in a most favorable position to cater for Australian canners as their range of agencies enables them to supply practically anything that the canners require.

They are also distributors for Wyandotte Alkali Products, and during recent years have made great strides with the sale of Canners' Alkali which is stated to be superior to caustic for Peach peeling.

During the season which has just passed, the Austral Otis Andebar Co. have installed quite a number of machines, besides filling the wants of the canners as regards spare parts, cutlery, etc. It will be very interesting to our readers to know that the company also manufacture those machines of Anderson Barngrover Mfg. Co., which can be made here, and that such machines are made to plans and drawings supplied by the parent company. This applies particularly to dried fruit machinery which, owing to its bulkiness, is most expensive to import. By manufacturing it here to the American plans, the dried fruit packer will receive the benefit of having the latest American improvements embodied in his machines, and securing them at a very much less cost than that of the imported machine. Messrs. Austral Otis Andebar mentioned to us the other day that they are at present making a Prune processor and subsidiary machines of the Anderson Barngrover type for a Prune concern in New South Wales.

Readers seeking requirements for their factories will receive every attention from the Austral Otis Andebar Cannery Equipment Pty. Ltd., Hanna-street, South Melbourne, Vic.

H. WILSON
Wholesale Fruit Merchant and Commission Agent,
No. 10. New Wholesale Fruit Market., Melbourne.
Accredited Agent for Victorian Central Citrus Ass'n.
Bankers.—National Bank of Australasia (Western Branch), Melbourne.
City Telephone: F 6444. **Private Phone:** M 3055.

Tasmanian Apples
Orders for Apples carefully handled and undertaken for all Overseas & Interstate Markets.
E. R. COTTIER Pty. Ltd.
Temple Place, Macquarie Street
HOBART - - TASMANIA
Tel. add. "ERCOT," Hobart.
Consignment shipments solicited on behalf of leading Fruit Brokers and Salesmen throughout England and Continent.

T. STOTT & SONS
Fruit Merchants
Established 1882
A Trial Consignment solicited from Growers in all States.
Prompt Settlement.
26 New Wholesale Fruit Market, Melbourne

Baits for Woodlice, Snails, Etc.—"E.K.N.A.," Auckland, writes:—I notice in your January number you recommend as a remedy for woodlice, slugs, and snails a mixture containing calcium of arsenate as a poison bait.

Can you tell me if this poison bait at the strength given will also poison dogs, cats and birds, and, if so, is there any method by which one can use the poison for snails, without risk to other animals?

Answer (by C. French, Junr., Government Biologist).—In the opinion of our chemist, it is very improbable that the baits containing arsenic would be acceptable to animals, but if they were taken, there would certainly be the risk of arsenical poisoning. The bait method of treating snails is really the best. There are some good proprietary mixtures.—"The Garden Lover."

"A NEW STORK."

"Children," said their aunt, "you have a new little brother. He came while you were asleep."

"Did he?" exclaimed the eldest. "Then I know who brought him."

"Who was that?" asked Aunt Mary.

"Why, the milkman, of course. I saw it on his cart—'Families supplied daily.'"

Victoria.

VICTORIAN FRUIT MARKETING ASSOCIATION.

THE MONTHLY MEETING of the Executive of the Victorian Fruit Marketing Association was held at the Department of Agriculture, Flinders-street, Melbourne, on April 29. There were present Messrs. H. G. Colombie, Chairman; W. H. Carne, G. W. Brown, F. Cave, F. R. Mellor, C. H. Jost, W. A. Webb, A. S. Harrison, K. Eagle, and the Secretary. Apologies were received from J. W. Barker (en route to England), J. B. Mills, H. Ford, C. M. Griffeth, and J. W. Bailey.

Mr. J. M. Ward, Superintendent of Horticulture, displayed check cases of Pears from consignments recently sold in London. The Williams Pears, packed in January, and which were in good condition in March, had mostly decayed. The different packs and types of cases were noted. The three-quarter bushel case "Canadian" style, was commended. Mr. Ward said the "long bushel" was definitely unsuitable for the Goulburn Valley Pears. Only seasoned timber should be used for cases. All Pears should be pre-cooled before being packed.

It was decided to affiliate with the Victorian Fruit Council.

Timber for Cases.—It having been reported that the Tariff Board was enquiring into the fruit case question, and that a request had been made for the discontinuance of the drawback on imported softwoods, the following resolution was carried unanimously:

"That growers having carried out their promises to timber millers to give the millers an opportunity to supply the growers' case requirements, and many deliveries having proved unsatisfactory, this Association re-affirms its desire to retain entire freedom regarding the use of any type or shape container, and that no change be made in the present arrangements regarding the source and mode of supply of timber."

Mr. F. R. Mellor was deputed to represent the Association at the Tariff Board enquiry.

Preliminary arrangements were made for the conference of the Australian Apple and Pear Export Council, to be held next August in conjunction with the Department of Markets.

* * * * *

Speaking at the monthly luncheon, Mr. J. M. Ward said that the estimates for fruit exported from Victoria, had been exceeded. Up to April 24, 334,963 cases of Apples, and 162,306 packages of Pears, in additoin to 9,808 packages of Plums had been shipped to the United Kingdom and Europe—a total of 507,077 packages for the season, as compared with 847,867 packages for the corresponding date for 1930. It was anticipated that some 4,000 cases of Apples, and 20,000 packages of Pears were yet to be exported. This quantity excluded the fruit shipped to Eastern and countries other than United Kingdom and Europe.

The fruit was being handled with much greater care in stacking in ships' holds. The packing had greatly improved.

WAGES IN FRUIT INDUSTRY.

A Further Decline.

Under the Federal award there has been a decline in wages in the fruitgrowing industry.

From May 1, the new rates operating are, for males £3/5/8 per week; females over 18 years of age, £2/4/5 per week, with a corresponding reduction in classified positions.

FRUIT MARKETING BILL.

To be Re-introduced in Victoria.

THE PRIMARY PRODUCTS Marketing Bill, which was recently rejected by the Victorian Legislative Council, is to be re-introduced into the Legislative Assembly.

It is understood the Bill provides for Marketing Boards to be set up by those industries which decide, on a majority vote, to have such Boards.

Should the Bill be again rejected, the Minister will probably introduce a measure to deal specifically with butter.

COOL STORES CONFERENCE.

Blackburn, May 26.

The annual conference of the Fruitgrowers' Cool Stores Association will be held at Blackburn on May 26, under the chairmanship of Mr. A. E. Hocking.

Many important items are listed for discussion. Papers will be read by experts on orchard cultural topics. A large attendance is expected.

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Fruit Importers and Salesmen
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TASMANIAN FRUIT EXPORT.

THE EXPORT OF FRUIT from Tasmania up to mid-April, including shipments amounting to 252,201 bushels from the Tamar, was approximately 1,797,024 bushels. Six vessels took 434,204 bushels of Apples and Pears from the port of Hobart for the United Kingdom in one week.

The P. & O. liner "Ballarat" left with 62,495 cases of Apples for London; the Scottish Shire liner "Berwickshire" sailed with 11,941 cases of Apples for Manchester and 40,385 cases of Apples and 4,465 cases of Pears for London. The Esperance Bay loaded 53,005 bushels of Apples for London and 25,948 bushels of Apples for Hull. The "Turakina" took 28,960 bushels of Apples and 6,963 bushels of Pears for London, 25,087 bushels of Apples for Liverpool, 29,889 bushels of Apples for Rotterdam, and 11,519 bushels of Apples for Bremen.

View in Mr. Gerrard's Orchard, Legana, Tamar, Tasmania.

The "Ferndale's" largest individual shipment of Apples comprised 24,880 bushels for Liverpool, 28,627 bushels for Hamburg, and 60,060 cases for London. The "Otranto" sailed with 19,107 bushels of Apples and 794 cases of Pears and 50 cases of exhibition fruit for London.

Sturmers have been the dominating variety, while there has been a decided decrease in the export of New Yorks this season.

It is stated that growers honored their contracts admirably by delivering the fruit to complete the allotments. Some growers failed only by sending their fruit late, with the result that certain quantities, although stowed in their allotted ship, were too late to be stowed with the fruit designated to a certain port, and had to be sent with fruit destined for another port.—"Mercury."

Mr. P. H. Thomas, Chief Horticulturist, Tasmanian Department of Agriculture, at the invitation of the Clarence Agricultural Bureau, addressed members at Sandford on the subject of selecting, grading and packing fruit for export.

This was much appreciated, and a vote of thanks was carried to the lecturer for his interesting and informative address.

TASMANIA APPRECIATED.

Pleasing reference to the high quality of Tasmanian fruit this season is made by Mr. W. L. Gregory, of the Gerrard Wire Tying Company, who recently returned from the island State.

Growers stated that this season the fruit was the finest and cleanest they had had for many years. Mr. Gregory states that the packing showed great improvement. He noted that in the South, 25 per cent. of the fruit was being shipped in softwood cases; in the North the percentage of softwoods would be 65 per cent. to 70 per cent. These cases were wire strapped. A fair quantity of fruit was also shipped in hardwood cases cut to the size of the "Canadian standard" case. These also were wire strapped.

The central stationary spray plants are stated to be working satisfactorily. Mr. Gregory saw these plants in operation on the orchard of Mr. George Kile at Castle Forbes Bay, also on the orchard of Mr. Freeman and Mr. Barnett at Franklin.

Mr. Ben Watson, at Castle Forbes Bay, is a capable orchardist. He had an excellent crop this year, but had the misfortune to be in the track of a hailstorm which did certain damage.

Mr. Taylor, of the Tamar Valley Co-operative Association, is very energetic and is performing good service for

Now

is the time to buy in your stock of Spraying Oil for the dormant period. A July spraying of Apple and Pear trees with Shell Redspray will stop the destructive work of Woolly Aphis, San Jose, Mussell and other Scale and Red Spider. Cherry trees will be freed from Scale pests; Citrus trees from Red Mite; Nectarines and Peaches from San Jose Scale; and Plums from Red Mite and Brown Scale.

Get your stocks of Shell Redspray in NOW!

SHELL REDSPRAY

Write to the Shell Company Limited for your free copy of the illustrated booklet "Profitable Fruit Spraying."

the growers. The Exeter Packing Shed, of which Mr. Taylor is the manager, is in good running order.

The recent Exeter Show was quite good. The quality of the fruit shown was of a very high standard. The show attracted a large attendance. Mr. R. E. Downie, sales manager of the Gerrard Wire Tying Co., was one of the mainland visitors.

* * * * *

Mr. Gregory left for Sydney at the end of April to visit the citrus districts around Leeton, Griffith, Gosford and other parts of the State.

Tasmania.—Reports to hand indicate that certain difficulties are being experienced in collecting the levy of one sixteenth of a penny on cases of fruit exported, under which system the State Fruit Advisory Board is financed.

Mr. S. R. Bushnell (Jaques Pty. Ltd.), who has just returned from Tasmania, speaks appreciatively regarding the quality of the Tasmanian fruit this season. The Sturmers, Scarlets, Jonathans, and other varieties were of unusually high quality. Mr. Bushnell visited the Huon and other districts in the south, also the Tamar Valley in the north. Everywhere the fruit was uniformly good, being clean, highly-colored, and free from blemish. Mr. Bushnell remarked on the increase in the Apple-buying trade, large quantities having been sold for export, f.o.b.

APPLE EXPORT RESEARCH.

"Continued research work is being conducted in connection with the transport of fruit from Australia to Great Britain," states Mr. Parker Moloney, Minister for Markets. "Mr. W. M. Carne, of the division of plant industry, is travelling to London in the steamer 'Barrabool,' under the auspices of the Council for Scientific and Industrial Research, to take observations on the conditions in transit of the cargo of Apples. He will investigate storage problems, with special reference to bitter pit. The expenses of Mr. Carne's investigations are being borne by the Empire Marketing Board. The P. and O. Steam Navigation Company granted him a free passage."

Messrs. C. A. Nobelius & Sons Pty. Ltd., Gembrook Nurseries, Emerald, Victoria, are offering in their advertisement in this issue fruit trees, ornamentals, shrubs, etc. Messrs. Nobelius have had 45 years' experience in this class of business.

SOIL STERILISATION.

HOW MANY NURSERYMEN realise the importance of soil sterilisation nowadays? It is certain that it is a coming thing, both in commercial and private gardens. Curiously enough the value of it was discovered by accident. Its discovery was due to Sir John Russell, who made many experiments, and who proved that plants are healthier and grow better in sterilised soil.

The chief object of sterilising is to get rid of the fungi that infests the soil, and to cure sickness of soil, which is produced in many ways, such as by high manuring, by water, by high temperature, or by too little air. There is also chemical sickness, all of which help the bacteria fungi to get out of balance. By steaming or baking at a temperature of 210-212 degrees F. such sickness can be cured, and the soil made fit for plants to thrive. Sterilisation destroys all the soft body organisms, but the hard body type are not hurt by sterilising, and it is through that ammonia-forming bacteria that the health and growth of the plant are promoted.

A fairly cheap volatile antiseptic, as a soil steriliser, is said to be formaldehyde in the proportion of one gallon to fifty gallons of water to cover an area of twelve square yards.—"Horticultural Advertiser."

STRAWBERRY CULTURE.

For growing Strawberries, the ground should be deeply dug, loosening up the sub-soil. Well-decayed farm manure should be worked in while digging. The plants can be set out in rows three feet apart, and eighteen inches from plant to plant. Hoe frequently between plants, to stimulate growth, and water well if the weather continues dry. Varieties suitable for general use are Laxton's Noble, Kentish Fillbasket, Melba and Ettersburg.—"City Beautiful," Christchurch, N.Z.

The Lord Knows.

A tourist was prowling around a Scottish churchyard. His eyes caught the epitaph, "Lord, she was thin."

"Say, sexton, what d'ye make of that?" he asked.

"That's all right, sir; the sculptor went over near the edge of the stone and dinna have room for the 'e'."

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QUEENSLAND.

The Stanthorpe Packing House is in good running order and considerable qantities of fruit have been handled in the present season. Mr. J. Gregory, Fruit Packing Instructor, Queensland Department of Agriculture, has been busy supervising the packing, and his services have been much appreciated.

A SOLID-FLESHED TOMATO.

Mr. Paul Donnier, of Kelvin Grove, Brisbane, has supplied the following additional note on a new Tomato, described as a "New Fruit Tomato," which he has introduced and propagated with satisfactory results:—

This new variety of Tomato (second year of its existence in England) was introduced by me into Queensland in August last. The seeds were sown in an old flower bed on September 21 without previously manuring the ground. In approximately three weeks the young plants were ready for transplanting. Germination of seeds was 100 per cent.

The young plants grew at a wonderful rate, far beyond my expectations, and developed in a remarkably short time into a picture of health and vigor, and would have reached a height of 7 feet had they been allowed to grow unchecked.

The fruit developed at an equal rate with the plants, forming clusters of from five to nine fruits on each cluster. The foliage is large and plentiful, well protecting the growing fruit. As to the fruit itself, it may safely be assumed as the perfection of a Tomato from every point of view. The fruit is round, smooth-skinned (no corrugation whatever), going on an average three to four to the pound.

The skin is of a very fine texture and may be peeled like the skin of a newly boiled potato. The core is very short. The flesh is solid right through, so that the Tomato may be eaten like an Apple, while in comparison to other varieties the seeds are few. Its travelling qualities also appear to be of an excellent character as, for instance: Picking several fruits just showing a reddish hue ten days before a local horticultural show, they were, at the date of the exhibition, just ripe for consumption. My crop of approximately 200 plants grown on very poor and shaley soil, yielded on an average 8 lbs. to the plant; but, of course, better results can be expected when cultivated under more favorable conditions.

Many controversies have taken place over a point which may be of interest—i.e., can Tomato plants be grown from cuttings? I have in my garden at the present moment a Tomato plant in bloom grown from a pinched lateral which was stuck in the ground as an experiment.—"Queensland Agricultural Journal."

SHIPMENTS TO ROTTERDAM.

To the Editor, "Fruit World."

Sir,—It is wearisome to have again to controvert your correspondent, Mr. J. W. Barker, but I would fail in my duty to our trade were his latest contribution allowed to pass without the needed corrective. May I also reply that he started this controversy?

Our respective personal opinions matter little; what is of moment is that many growers look for guidance to exporters, such as your correspondent and myself, who are supposed to be better acquainted, by means of irrefutable facts, with the multifarious phases which cover the "marketing of fruit overseas," and I believe your paper has already rendered good service in this respect by publishing divergent views.

I shall not retraverse past matter, as I have already dealt minutely, having adduced incontrovertible facts, with the untenable contentions advanced by your correspondent, but as he now changes his ground, let us study his unexpected but dangerous volte-face.

Your correspondent now says "his original advice only dealt with Australian and not foreign fruit," which seems rather illogical, it being self-evident that if a market is of importance to other exporters, there seems no valid reason why Australians should not reap equal benefit by supporting it.

It is an axiom of successful marketing that supplies first-hand must be placed at the point of arrival which will offer the best means of retransportation and entail the least cost of delivery to the consuming public, and your correspondent cannot, with all his ingenuity, deny that it is more economical to forward fruit from Holland than from other Continental ports to certain parts of Europe, including a portion of Germany, because of the cheaper cost, and better method, of transportation by the numerous inland waterways which have made Holland and Rotterdam in particular, such an important distributive entrepot to Europe from all parts of the world.

A mere glance at the map will show that the geographical positions of Hamburg and Rotterdam are so entirely different, that their outlets are also quite different.

Rotterdam enjoys an immense geographical advantage not sufficiently recognised in Australia. It is situated at the estuary of the largest river in Europe, the Rhine, which flows for hundreds of miles through one of the richest and best organised industrial centres of the world, and is navigable for steamers right up to Basle. It is rather surprising that it is not realised here that Rotterdam is the premier port of Europe, and the third in the world, only coming after London and New York. Figures for 1927 show that Rotterdam alone handled 75,000,000 tons of cargo, which is several times the total quantity handled in the whole of Australia, whilst in the same year 24,710 ships entered Holland direct from sea, which is

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again several times more than the total figures for the whole of Australia. When all this is realised, together with the economical water transportation referred to, it is at once admitted that not only should Rotterdam not be ignored as a distributive outlet by Australian exporters, but that its market should be more intensely exploited, especially seeing that, for tariff reasons, the more southerly and also important distributive market of Antwerp cannot very well be much used for Australian Apples, and I submit that by his attitude your correspondent is not doing service to Australian Apple and Pear exporters.

German buyers from Westfalia and the Rhineland prefer to purchase their supply in Rotterdam because of the shorter transport and lower freights, whilst Southern Germany, and parts of France and Belgium also draw supplies from Rotterdam; American Apples are even supplied from Rotterdam to Mediterranean ports and many other places of Southern Europe; in fact, as far as Tripoli, Cairo, Alexandria, Oran, etc. This is quite apart from the important internal fruit consumption of Holland, which is clearly shown by the fact that, notwithstanding heavy supplies, prices for Spanish Oranges have generally been higher than on other European markets, as is demonstrated by the following shipments from November, 1930, to February 21, 1931:—

Holland	1,200,000 cases
Hamburg	1,137,000 „
London	1,146,700 „
Liverpool	815,000 „

In effect, your correspondent advises Australian exporters to disregard progress, and to take no notice of what others are doing, etc. Following his line of reasoning to its logical conclusion, we should revert to the bad old days when Australia and New Zealand concentrated the bulk of their shipments through the London bottleneck, for carriers and others to make money at the expense of the grower and the consumer. One knows the reply of exporters if it should be similarly advocated that, say, Liverpool and other U.K. markets, should not be supplied direct because it would be better for traders to go to London. Not only does he emphasise the inadvisability of using Rotterdam as a market, but he had much to say against our having used the excellent cool stores facilities available at the Hook of Holland, whence we sold and distributed the Victorian cargo of the "Port Hunter." Now let us see, not what "foreigners" are doing, but what our own neighbors and relatives are doing:

I have before me the New Zealand shipping programme from end February to mid-April; it covers some 520,000 cases. Of these, all the Continental shipments, totalling about 102,000 cases, are exclusively listed not only for Holland (notwithstanding the fact that New Zealand Apples enjoy an advantage of 1/6 per case over Australians in Germany), but actually to the Hook of Holland, so much despised by your correspondent, and which we used ourselves for the cargo of the "Port Hunter," and for which action we were so severely but unwarrantably rated by your correspondent.

Now, see the position, we went to a very great deal of trouble and expense to pioneer a new distributive outlet for Australia, which we rightly believed was in the best interests of Australian exporters, but, for some reason, your correspondent is doing his utmost, not only to defeat its extension and prevent its repetition, but to retard the progress that is so much needed in our business, and, in the process, by his misguided advice, make it impossible for Australian exporters to reap the benefit they should enjoy, and which others, under better guidance are not slow to seize.

Having received a number of enquiries for information relating to Apple exports to the Continent from U.S.A. and Canada, the following figures may be of interest to some of your readers:—

(The equivalent, in barrels and boxes.)	Bushels.
Hamburg	3,680,795
Bremen	193,901
Rotterdam	3,015,972
Antwerp	1,926,394
Copenhagen	511,297
Norway	113,756
Sweden	262,891
Finland	55,485
	9,760,491

Be it noted that because of tariff differences, practically all the imports into Antwerp, except for some 28,000 boxes, consisted of barrels containing about three bushels of unwrapped Apples.

Yours faithfully,
H. G. COLOMBIE.

Melbourne, 15/4/31.

SOUTH AFRICAN PEARS.

Victorian Report Criticised.

The Editor, "The Fruit World of Australasia."

Dear Sir,—On page 488 of your December issue you report an address by Mr. F. J. Garford, delivered at Doncaster, Victoria. In this address he refers to South African Pear sales last season. It is amazing to anyone acquainted with the South African trade to read the extraordinary mis-statements made. For instance, he states that South African Pears would average 5/9 per tray, the trays containing from 18 to 36 Pears, and from this he deduces a gross result of 23/- per case. I am enclosing a series of market reports for South African sales last season which show that the average price for ordinary varieties of South African Pears in cases last season is round about 12/- to 15/-, and for the bulk of the trays of ordinary Pears the prices range from 3/- to 4/6.

Further on in your report, Mr. Garford refers to the wide range of prices shown in the returns, and he may be interested to know that a similar wide range of prices occurs in South African returns for the same reason, and that is, the spread of the sales over several days, and in various quarters.

Further on, Mr. Garford says that the South Africans arrange for the distribution of their produce through six agents. I am enclosing a sample manifest of a boat which arrived at the height of the Pear season. From this you will see that South African Pears are distributed widely to salesmen throughout Covent Garden and the provinces in exactly the same way that the Australian shipments are distributed throughout the trade.

Again, your report makes Mr. Garford say that the fruit was under the direct control of the growers, or districts concerned through the medium of their representatives, until sold. This is entirely wrong. The proportion of fruit shipped to the growers' representative last season was less than 15 per cent., the other 85 per cent. being handled by various members of the trade by direct shipments to salesmen selected, not by the organised growers, but by individual growers themselves.

These are plain statements of facts which are supported by the documents now sent to you, and it follows, therefore, that the whole of the beautiful picture of controlled distribution which Mr. Garford has put up as the reason for the fabulous prices which he says the South Africans have received (which the enclosed documents prove that they have not received) falls away.

If Mr. Garford would like to know the reason for such success as the South Africans have had in shipping fruit to the European markets, he should be told that it lies in the fact that they have for 25 years shipped under Government inspection, up to established grades, and packed in established forms of package.

In conclusion, it may be advisable to say that, whereas Mr. Garford would lead your readers to suppose that the South African farmer is basking in the sunshine of prosperity, the facts are that he is seriously disturbed at the very low returns which he is receiving. Fruitgrowing in South Africa is anything but a prosperous occupation under present conditions.

Look at the present prices on the enclosed market report for Bon Chretien Pears, which shows cases to be realising 12/- to 14/-.

Yours faithfully,
"SOUTH AFRICAN."

Capetown, 23/2/31.

[The market reports, shipping manifest, etc., are to hand and support the figures quoted by South African.—Ed., "F.W."]

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The Papaw or Papaya.

(Carica papaya.)

(G. B. Barnett, Fruit Inspector, Grafton, in "Agricultural Gazette of N.S.W.")

THE PAPAW, OR PAPAYA, although a typical tropical plant, grows well on the Upper North Coast of New South Wales. It thrives best and produces good quality fruit on our scrub soils, but very satisfactory yields are obtained on the many other types of soil on which Bananas are grown, provided the drainage is good (this is essential) and protection is afforded from frosts and winds.

Under favorable conditions the plant may mature its fruit within twelve months from planting. As far south as Coff's Harbor the Papaw has been recorded on several occasions as maturing fruit of excellent quality during its eighth month. The average productive life of the plant is about four years, much depending on soil, location, and rainfall.

Male and Female Plants.

According to Popenoe* the Papaw is normally dioecious, i.e., with the staminate and pistillate (male and female) flowers produced on different plants. In addition to the staminate and pistillate forms, intermediate forms have been observed in which both sexes are combined in one plant. Staminate flowers may occur with rudimentary stigmas and ovaries which give rise to small worthless fruits, and there is a hermaphrodite type, which regularly produces perfect flowers, is self-pollinated, and yields excellent fruits.

Many and varied are the suggestions that have been expounded concerning the determination of sex, but the writer has yet to be convinced by any of these so-called "positive tests," except that the most vigorous plants usually grow up to be males. On account of the uncertainty of determination of the sex when setting out the plants many growers prefer to sow the seed in the land where the plant is intended to remain. This is the common practice among Banana growers who grow Papaws as a sideline, and certainly is to be recommended as the best method of propagation, as the plants do not receive the setback occasioned by transplanting.

Methods of Planting.

The usual practice in the Banana plantation is to spread the seeds of a fresh, fair-sized, good quality fruit in rows or circles between the Banana stools and then cover them with a light layer of soil. Thinning out of the plants is made when they are big enough to determine the sex. To every ten to twelve female, or pistillate, plants retain one male, or staminate, plant.

Where the seed is planted in boxes or beds, procure seed as fresh as possible from fruit of good size and quality and free from disease and plant it in the early spring in prepared soil, covering the seed to a depth of 1 inch. Keep the beds or boxes partially shaded during the early pro-

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There is Nothing to Equal—
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pagation period, and maintain the soil in a slightly moist condition.

As the plants develop above ground allow them more sunlight in order to harden them off, and when about a foot high they should be ready for planting out.

Avoid the hot midday sun when transplanting. Just prior to planting out give the plants a liberal watering in order to loosen the soil and allow of their being removed with a minimum amount of damage to the roots. The older leaves should be nipped off when the plants are being put out, allowing the leaf-stalk to remain. The plants should be spaced about 6 to 8 feet apart, and, if in rows, about 10 feet should be allowed between the rows.

When to Pick the Fruit.

Great care is necessary in harvesting and packing for market, as the fruit is very easily marked and bruised. The longer the fruit is allowed to hang on the tree the better is the quality and flavor, but after reaching a certain stage of maturity its carrying qualities are impaired. The proper stage of maturity at which to harvest depends on the nearness of the market, but the North Coast grower will find that for the Sydney market the best stage at which to harvest the fruit is when the calyx end is changing to a yellow color.

In packing, the case should be given a layer of either wood-wool, grass, or crumpled paper on the bottom or top, while the fruit should be liberally wrapped with paper.

The Papaw should be cut in half for eating, the seeds scraped out, and sugar, salt, Orange or Lemon juice applied to the flesh. This fruit is becoming increasingly popular in our cafes for serving with ice-cream. The green fruit may be cooked and served as one would a vegetable marrow, or it can be used for making chutney.

*Manual of Tropical and Sub-tropical Fruits, by Wilson Popenoe.

THRIFT IN RELATION TO PROSPERITY.

"THE individual saves; the saver invests; the State disperses; the expenditure fructifies; the community gains, the individual is remunerated, and finally the saving is repaid. That is the whole simple economic process." The quotation is from a speech recently delivered in London by Sir Herbert Samuel at the annual meeting of the National Savings Committee. Other prominent speakers confirmed the view of Sir Herbert Samuel as to the reaction upon prosperity of the thrift of individuals. Most of us shrink from the word thrift. We interpret it as meaning stingy, parsimonious, mean, and all other sorts of pitiable things, whereas the derivation of the word gives us the meaning to thrive, to develop vigorously, to prosper. Heaven only knows that is precisely what we want to do—to develop vigorously, to prosper. The will to thrive concentrates upon three essentilas.

It Eliminates Waste.

The American industrialist has reduced this activity to a fine art. Ford's plant at Dearborn salvages by-products to the value of £200,000 per month. Many people on reduced incomes could live without lowering the standard of living by eliminating wasteful or unnecessary expenditure.

It Makes the Best Possible Use of One's Resources.

That is more than the mere elimination of waste, it is the application of constructive wisdom to resources. Thrift gets the most out of the least. Even a shrunken income may be made to yield pleasures of a rarer quality by a change of perspective, and the adjustment of one's tastes —in other words by tuning in to the larger and better harmonies of life. Many of the Continental peoples, who are supposed to be on a much lower standard of living than Australians, find enjoyment in the arts and crafts that puts our standard rather in the shade.

It Also Contrives to Build Up a Reserve Fund.

It is here that thrift reacts most powerfully on national prosperity. In proportion as we can teach the community to care for themselves in that proportion we build for communal prosperity. And it is here that our Governments have failed very miserably. They have lived only in the immediate present, and gambled on the future. What wonder then that thousands of young people have followed suit and lived in the spirit of "Bah! What do I care for to-morrow—I'm flush to-day!" Robinson Crusoe was able to live on his desert island because of thrift; he saved from his first tiny crop sufficient seed to plant the following year, and so from year to year, until his needs were more than met for all time. Out of individual savings capital is built up for the thousand and one requirements of this age. Thrift is at first a self-protective instinct, then it blossoms in national prosperity. It is not a panacea, or a cure-all, but without it national prosperity cannot survive.

(Contributed by Alfred L. Gibson, State Savings Bank.)

DWARF FRUIT TREES.

Big Crops of Fruit on Miniature Trees.

Messrs. C. A. Nobelius & Sons, the old-established nursery firm, write on this subject:

"We have nice stocks of these dwarf Apple trees to offer this season; to overcome the woolly aphis on the roots of the plants, we use the English and French Paradise by working these varieties on to our Northern Spy, and then budding our fruiting varieties on to the dwarf stock. This makes the tree specially adapted for small gardens where a number of varieties is required, as they can be planted from 6 feet apart. They produce fine colored fruit, at an early age."

* * * * *

Here is a list of the varieties obtainable:—Cleopatra, Delicious, Democrat, Emperor Alexander, Glengyle Red, Granny Smith, Gravenstein, Jonathan, Liveland Raspberry, London Pippin, Lord Suffield, Munroes' Favorite, Red Statesman, Reinette du Canada, Ribston Pippin, Rome Beauty, Stayman Winesap, Twenty Ounce, Wilson's Red June.

These trees come into bearing early, and are in every way satisfactory as they can be planted six to eight feet apart, several varieties can be planted in proximity, this being of the utmost value as regards cross pollination.

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The Fruit Trade

Market Reports and News Items

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Timm & Gerstenkorn.

DENMARK.

Copenhagen:
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International Fruit Import Co.

AUSTRALIAN FRUIT IN ENGLAND AND GERMANY.

London (April 24).—Several shipments of Australian fresh fruits have been sold within the past few days.

Prices realised in the principal markets are as follows:—

Liverpool.—"Euripides"— Apples: Ribstons, 8/6 to 10/- case; Cox's, 10/- to 14/-; Alfristons, 9/- to 12/6; Mobbs, 9/- to 9/9; Worcesters, 9/- to 9/3; Cleo., 9/6 to 11/3; Dunn's, 9/6 to 11/-; Jons., 7/6 to 10/3. Tas. Pears (trays): Boscs, 4/9 to 5/9; Caps., 4/3 to 5/3. Cases: Clairgeau, 7/9 to 15/3; Williams, 9/-.

"Moreton Bay."—Tas. Apples: Ribstons, 8/- to 10/-; Cox's, 14/- to 18/-; Alf., 11/- to 12/9; Worcesters, 10/- to 11/9; Duke of Clarence, 8/6 to 10/9. Vic. Pears—Cases: Boscs, 14/- to 17/6; Packhams, 15/- to 17/6; Anjou, 17/-.

"Oronsay."—Pears: Boscs, 13/9 to 16/6; Packhams, 14/- to 16/6; Anjou, 18/3 to 18/6; Winter Coles, 13/- to 14/-; Howells, 12/-.

Glasgow.—"Idomeneus"—W.A. Jon. (immature), 9/6; Cleo., 10/6 to 11/-; Ben Davies, 9/6 to 10/6. Vic. Apples, 7/9.

Hamburg.—"Strassfurt's" Shipment.—Fruit was generally lacking in color. Demand fair. Vic. Jon., 10/- to 13/-; Cleos. and Dunn's, 11/- to 14/-; London Pippins, 10/- to 11/-; Tas. Jon., 10/- to 12/-; Cleos. and Dunn's, 11/- to 14/-; Ribstons, Alfs., and Alex., 8/- to 10/-; Worcesters and Tasman's Pride, 9/6 to 12/-; Cox's, 13/6 to 16/-. Pears: Trays, Boscs, 3/6 to 6/-; Clairgeau, 4/- to 5/-. Double trays: Duchess, 10/- to 14/-: Cases: Clairgeau, 10/- to 12/-.

London.—Major H. Dakin, Australian agent for Geo. Monro Ltd., London, Manchester, etc., advises under date April 20 having received the following cable from Monro's:—

"Orontes" landed generally good condition. Tas. Alf., 11/6 to 13/-; Duke of Clarence, 11/- to 11/6; Cox's, some spotted, 12/- to 14/-; Worcesters, 9/- to 11/-; Ribstones, 10/- to 10/6; Vic. Jons., 12/- to 13/-; Pears, Howells, 10/- to 12/-; Anjous, Packhams, 12/- to 14/-; half-cases, 7/- to 8/6.

"Limerick."—Mostly in deplorable condition. Plums and Bon Chretiens useless. Howells, 9/6 to 11/-; Anjous 11/- to 14/-.

"Euripides."—Only fair condition. Vic. Jons., 10/-; K. David, 11/-; Shoreland Queen, 9/- to 9/6.

SOUTH AUSTRALIA.

The general manager of the Government Produce Department (Mr. G. A. W. Pope) has received the following cablegram from the office of the Trade Commissioner for South Australia, London, dated April 22:—

"There is a good demand for Apples, the market being somewhat easier. W.A. Jons. are quoted at 11/- to 13/-, Cleo. 11/- to 12/6, Dunn's 10/6 to 13/-; Vic. Jons. 9/3 to 11/6, Dunn's 10/- to 11/3; others 10/6 to 11/9; American Winesaps, 9/6 to 11/-; Newtown Pippins, 10/6 to 12/-."

NEW SOUTH WALES.

Sydney (24/4/31).—Apples, local, eating, Del. 7/- to 10/-, Rome Beauties 5/- to 8/-, Jons. 5/- to 9/-, King Davids 4/- to 7/-, Five Crowns 4/- to 7/-, G. Smiths 6/- to 11/-; cooking, 3/6 to 7/-; jam, 2/-; Tas. Alexanders 4/- to 6/-, D.C. and T.P. 5/- to 7/-, Jons. 6/- to 9/-, French Crabs 6/- to 9/-, other varieties 4/- to 6/- per bushel case. Bananas (genuine grades), nines 15/- to 16/-, few 17/-, eights 12/- to 14/-, sevens 9/- to 12/-, sixes 5/- to 8/- per case. Citrus Fruits: Lemons, local, choice 7/- to 8/-, medium 5/- to 6/-, small 3/- to 4/-, irrigation 7/- to 10/-; Oranges, new main crop, common 3/- to 5/-, Navels 4/- to 7/-, second crop 3/- to 6/-, few 7/-; Vic., 6/- to 12/- per bushel case. Custard Apples 3/- to 5/-, few 6/- per half-bushel case. Grapes, Muscatels, black 4/- to 6/-, white 5/- to 6/-, sherry 2/6 to 5/-, irrigation Ohanez 4/- to 6/-, Cornichons 3/- to 6/- per half-bushel case. Passion Fruit, local 4/- to 11/-, Victorian 5/- to 8/- per half-bushel case. Pears, local, Packhams 5/- to 8/-, B.B. 5/- to 6/-, W.C. 4/- to 7/-, cooking 3/- to 5/-; Tas., W.C. 5/- to 8/-, B.B. 4/- to 5/-, other varieties 3/- to 5/- per bushel case. Persimmons, 2/- to 3/6, few 4/- per half-bushel case. Pineapples, Queens 6/- to 10/-, few 11/- per case. Quinces, 4/- to 7/- per bush. case. Tomatoes, 1/3 to 8/- per half-bushel case; Vic., 4/- to 9/-, choice 10/- to 11/- per bushel case.

VICTORIA.

Melbourne (25/4/31).—The following prices are supplied by the Wholesale Fruit Merchants' Association of Victoria:—Apples, best eating and cooking, to 5/-; few specials 6/-. Bananas, Queensland, green, 9's and 8's, 14/- to 15/- per double case; 7's, 10/- to 13/-; 6's, 6/- to 9/-; selected lines for country trade higher; rust-affected lines lower. Custard Apples, Queensland, 3/- to 7/- half case. Grapes, 6/- to 9/-; Grape Fruit, Queensland, 15/- to 16/-, few 18/-; few specials higher. Lemons, 4/- to 6/-; few to 7/- case. Oranges, Queensland, 7/- to 9/-; specials, to 10/-; Valencias, 8/- to 14/-; Navel Oranges, few arriving, selling to 16/-. Passion Fruit, 6/- to 9/-; few specials higher. Pears, 3/- to 5/-. Pineapples, 6/- to 10/-; a few 11/-, double case. Tomatoes, best, to 7/-. Sales of all fruits were restricted owing to the holiday to-day.

The Melbourne manager of the Federal Citrus Council of Australia reports that small parcels of new season's Thompson's Navels arrived from Merbein and M.I.A. growers during the week. Opening prices were to 16/- and 17/-. Included in Valencia consignments were some of the special Merbein late-hanging variety, which realised 17/- and 18/- a case. The Lemon market was depressed. Sales were as follows:—Lemons, good standards, fully colored, 203-225, to 8/- and 9/-; 180-248, to 7/-; small, large and faulty, from 4/-. Valencias, average standard grade, 75-96, 5/- to 7/-; 112 up, 7/- to 8/-; with some sales to 9/- and 10/-; a few wrapped lines to 12/- and 13/-, best counts; selected lines higher. Grape Fruit, new season's, few 16/- to 22/-. Navels, new season's Thompsons, few 15/- to 17/-.

QUEENSLAND.

Brisbane (24/4/31).—Local Fruit: Pears, Stanthorpe, 4/- to 7/-; Pineapples, S.L., 5/- to 8/- case; Passion Fruit, first quality, 8/- to 10/-; seconds, 6/- to 7/- half-case; Grapes, white, 4/- to 5/-; Muscatels, 7/- to 10/-; Black Hamburg, 4/6 to 5/-; Centennial, 6/- to 8/-; Gros Colmar, 5/- to 7/-; Black Prince, 3/- to 5/-; Purple Cornichon, 9/- to 12/-; Malaga, 8/- to 10/-. Apples, eating, G. Smith, 8/- to 9/-; Munros, 6/- to 7/-; Demos., 6/- to 8/-; Del., 6/- to 8/-; Yates, 6/- to 7/-; Rosellas, 4/- to 7/-; Limes, 3/- to 4/-; Lemons, local, 6/- to 9/-; Northern, 10/- to 14/-; Byrnestown, 13/- to 16/-; Quinces, 4/- to 5/-; Custard Apples, 2/6 to 4/-; Oranges, local, 4/- to 6/-; Byrnestown Navels, 9/- to 12/-; Gayndah, 10/- to 11/-; Howard, 6/- to 9/-; special Joppas, 10/- to 11/-; Mandarins, Howard, 11/- to 12/-; Fewtrels, 5/- to 7/- a bush.; Emperor, 7/- to 9/-; Scarlet, 9/- to 12/-. Imported Fruit: Tas. Apples, F.C., 9/- to 11/-; Jon., 8/- to 9/-; others, 6/- to 8/-; Vic. F.C., 9/- to 11/-; Jon., 7/- to 9/-; Kentucky Jons. and G.S., 7/- to 10/-. Pears, W.C., 7/- to 10/-; G.S., 8/- to 9/-; others, 6/- to 8/-. Grapes, Purple Cornichon, 8/- to 10/-. Plums, G. Duke, 4/- to 6/-. Lemons, 6/- to 11/-.

WEST AUSTRALIA.

Perth (17/4/31).—Apples, Dunn's, flats 2/6 to 6/-, dumps 3/6 to 8/6; Jon., 3/- to 7/6, 6/- to 10/6 (special to 15/-); Cleo., 2/- to 5/6, 4/6 to 8/- (special to 9/9); G. Smith, 4/6 to 7/-, 5/- to 11/9; Del., 3/6 to 7/6, 4/- to 11/6; other varieties, 3/- to 8/-. Citrus: Oranges, plain, flats 3/- to 10/6; Lemons, 4/- to 10/6. Pears, Bartlett, flats 2/6 to 8/6, dumps 4/- to 8/6 (special to 12/6, overripe from 1/-); other varieties, 1/6 to 5/6, 2/6 to 7/-. Grapes, open, white 2/6 to 6/- (special to 10/-), colored 3/- to 9/-, closed 2/- to 4/-; Passion Fruit, flats 10/- to 14/6, half-bushels 6/- to 11/6; Persimmons, 2/- to 7/-, dumps 2/- to 6/6 (others from 1/-).

SOUTH AUSTRALIA.

Adelaide (24/4/31).—Apples (eating), 7/- to 9/- case; do. (cooking), 6/- to 7/- case; Figs, 8/- case; Grapes (dark) 7/- case, do. (white) 6/-; Lemons, 7/- to 8/-; Oranges (common) 8/- to 9/- case, do. (Navel) 12/-; Pears (eating) 6/- to 8/-, do. (cooking) 3/-; Pineapples, 18/- case; Plums (Damson), 7/-; Pomegranates, 4/- case; Quinces, 2/-.

PERSONAL.

Mr. A. E. Hocking has decided to contest the Southern Province seat for the Legislative Council in the forthcoming election on June 6.

Mr. Hocking is the managing partner in the Graceburn Valley Orchard, Healesville; President of the Metropolitan branch of the United Country Party; President of the Cool Stores' Association of Victoria, and Chairman of the proposed Victorian Fruit Council. Mr. Hocking has had many years of public experience as a councillor. He is a successful business man, a chartered accountant, and is a director of several companies. Mr. Hocking's candidature will appeal to primary producers and citizens throughout the electorate. Being a primary producer, he can be relied upon to foster in every way the country interests. In this national crisis all sections of the community admit that the interests of primary producers must in every way be conserved and fostered if the nation is to win through to prosperity. It is certain that, if elected, Mr. Hocking will bring a trained mind to bear on the country's affairs.

As voting is voluntary, orchardists are asked to make a note of the date—Saturday, June 6—and to fulfil their privilege of voting on this occasion.

FRUIT TREES

ONE GROWER SAYS—
"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

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Get more
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The explanation why Karswood Poultry Spice brings about increased egg production is a perfectly simple one. Karswood contains ground insects, and insects contain and are the sources of the natural tonic that every fowl needs. On a large run, where very often they are left to their own devices, fowls will go to no end of trouble to see that insects form a considerable portion of their daily menu. But very often insects are not to be found. That is why you should make quite sure your birds get them in Karswood Poultry Spice. One tablespoonful, in the evening mash to every 20 birds, is sufficient. If you feed it regularly you will be amazed at the improvement.

"Keeps Birds in Splendid Condition."

We have been using Karswood Spice for a period of four years. Our fowls are now six years old and last year we had an aggregate of 2,282 eggs from 12 fowls ending the nine months—an average of 7 eggs a day. The Spice keeps the birds in such splendid condition and is very helpful to them during the moult. They are at present looking very well and red and I think they will again shortly be laying so you see people tell you that fowls do not lay after 3 or 4 years old but we have this good proof which should be proof enough. We have found Karswood to be absolutely everything that is claimed for it by the manufacturers and we are more than pleased to strongly recommend it to all our friends and everyone who keeps fowls.

(Sgd.) MRS. J. A. MARCHANT, Lagoon St.,
23/6/29 Narrabeen.

"From 1 Egg a Day to 8 Eggs a Day."

I have much pleasure in informing you that I was only getting about 1 or 2 eggs a day from eight hens, but, since using Karswood Poultry Spice, I have been getting eight eggs per day and the chickens and ducks are growing wonderfully. I will recommend it to angone.

(Sgd.) MRS. MACDONALD, Euccrabendinni E.,
23/10/29 Bowraville, N.S.W.

Supplies.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½lb. packet, 1/-; 1lb. packet, 2/-; 7lb. tin, 13/-; 14lb. tin, 25/-; 28lb. tin, 48/-.

KARSWOOD
POULTRY SPICE
2.M.30.
Increases egg-production without forcing.

Poultry Notes

N.U.P.B.A.

Eastern Districts Sub-Branch.

At the monthly meeting of the Eastern Districts Sub-Branch of N.U.P.B.A., representatives of the N.U.P.B.A. Coy. (Messrs. Carter and Granter), delivered an address on the company's past activities and future aims. Although the Branch has had a live Egg-circle for over eleven years, the points put forward were well received and consideration promised.

The Branch, at its annual meeting is making an important business item of the new Egg Circle agreement which is being drawn up.

Culling and Mating.

A lecture by Mr. J. A. Naylor, Australorp breeder of note, on the subject of culling and mating, was the main item of the evening.

In brief, the lecture included the following points:—Commence to cull on your eggs for incubation, only eggs of good size and texture should be considered as it is more profitable to market doubtful ones and keep up your percentage of chickens hatched, and at the same time your egg sale returns.

This is especially essential in heavy breeds.

Commence to cull your chickens the day they are hatched, and continue every day of the year. Weakly and unhealthy chicks are not worth the trouble of caring for, and the labor of rearing. Even though you do, the birds cannot, as a general rule, be as profitable as the ones healthy at birth.

By culling day in and day out the task of selecting your breeders is made very much more simple, and saves time and worry at the critical time.

Breeders should be selected as late as possible before the moult sets in. February and March are good months to select the late moulters.

Workers are always the ones to pick, and the bird's appearance before the moult will be a sure sign of the worker. There is no need to explain what the worker looks like.

QUALITY IN DAY-OLD CHICKS.

In these days, when the tendency is to purchase day-old chicks instead of going to the trouble of hatching, it is essential that those who cater for this trade should spare no effort to produce first-quality chickens. It is regretted, comments the N.S.W. Poultry Expert, that owing to the increasing number of hatcheries there is a tendency to reduce prices to a point at which good, sound chickens cannot be produced. This can have but one result, which is already apparent on some farms where cheap chickens have been purchased.

"During my tour abroad," states the writer, "I saw ample evidence of the evils resulting from the wholesale production of day-old chicks—such as lack of physique, the prevalence of disease, and a high rate of mortality among not only the young stock, but also the adult birds. Heed should be taken of these danger signs, and if it is desired to purchase day-old chicks, due inquiry should be made to ensure, as far as possible, that they are produced from sound stock."

Importance of Shell Grit.

Calcium Carbonate Requirements of Laying Hens.

CALCIUM CARBONATE is an important constituent of egg shell, and such is the demand for this ingredient on the highly productive commercial hen that particular provision must be made in the bird's diet. An interesting experiment in this relation, observed during his recent visit to the United States, is referred to by the Poultry Expert of the Department of Agriculture, N.S.W.

A Constant Supply Necessary.

Most poultry breeders are aware of the necessity of supplying shell grit to laying hens, but there are still some who are not sufficiently impressed with the importance of this material in the poultry yard, states the Departmental handbook, "Poultry Farming in New South Wales." A number of cases come under notice where this essential is either supplied irregularly, as it is thought the hens might require it, or it is not supplied at all; consequently, the hens are found to be in a bad condition, and few eggs are being laid. The result is quite natural—hens cannot sustain egg production and continue to make shell from their food and the indifferent material to be found in the soil. Should a flock of hens in full lay be deprived of shell grit as indicated, they will soon slacken off laying, and show signs of breaking up.

The practice of giving shell grit at stated times, or occasionally, is also wrong, because, having been without it, there is a strong tendency for the birds to eat too much at one time, and to overload themselves when a supply is made available.

PICKING LAYERS.

Questions:

"Red Top P.F." writes:—

1. Could you tell me how to pick the best layers of Khaki Campbells and Indian Runners?

2. What feeds should I use for ducks being single-tested and what amount for each duck?

3. Could you give me a list of laying competitions for the next six months in Victoria? If not, could you tell me where I could obtain same? Does entry fee cover all expenses of competition?

Answers:

1. To select Khaki Campbells as layers. The ducks should have a well-balanced body, with legs set well apart. The bill should be long, but not too broad; the head should be small and well shaped, the eye bright and near the top of the head; the neck should be long and thin and in proportion with the head and rest of the body.

2. Two-thirds pollard, one-third bran, up to 50 per cent. greens, 10 per cent. meat meal, shellgrit always before the birds. Feed as much mash as the ducks will clean up. Do not leave any about to sour.

To select Runners for egg production, see article by Mr. S. B. Bertelsmeier (S.A.) in "A.P.W." for March, 1930.—Ed.

3. On the inside back cover of this issue you will find a list of Victorian egg-laying competitions, together with the names and addresses of their Secretaries or Managers. Entries have now closed for 1931-32 competitions in Victoria, practically all of which commenced on April 1. The cost of forwarding the crates of birds to the competition grounds is the only expense that has to be met by the competitors—apart from the entry fees.

(Answers to duck queries supplied by Mr. M. G. Leech, Trevallyn Duck Farm, Campbellfield.)

STARTING A POULTRY FARM.

Questions:

"A.H.B." (Arncliffe, N.S.W.) writes:—

I am thinking of starting a small poultry farm, and would like advice as to the best locality to start, also the best fowls to stock with the market for eggs, chicks and poultry, and how much land would be necessary for 500 fowls?

Answer:

There are many localities in the neighborhood of Sydney where a poultry farm might be successfully established. For a beginner we would advise the selection of a site adjacent to other successful poultry farms, of which there are many in the Parramatta district, in the vicinity of Liverpool and other areas within a reasonable distance of the Sydney markets. By doing so you could seek assistance and advice from men who have made a success of the business.

The area of land required would depend on the methods adopted, whether intensive, semi-intensive or free range. Poultry farms range from about half an acre to seven or eight acres. It is advisable to select land in a locality where more can be purchased adjacent as required. It is advisable to provide sufficient land for the growing of greenstuff.

It is better to start in a small way and build up. Australorps and White Leghorns are the most popular breeds for commercial poultry farming in Australia, though other breeds are being used successfully. It is essential to secure a good strain from a reliable breeder. There is generally a profitable market for eggs through the year, and surpluses are exported during the period of over-production. A payable market can generally be found for table poultry at particular seasons of the year, but the demand for day-old chicks and stud stock must, of course, be created by the breeder and gradually increased by good-will, built up by the quality of the stock sold.

Breeders consistently prominent in egg-laying competitions usually experience little difficulty in building up a good business in day-old chicks and breeding stock.

Mrs. Ann: "I need a girl who knows her place, is never out at night, and can be depended on to stay."

Applicant: "That's not me, mum, but I know just such a one; she's me cousin Emeline."

Mrs. Ann: "Where can I see her?"

Applicant: "Nowhere, mum. She was buried last Tuesday."

* * * * *

Professor: "What are the constituents of quartz?"

Bright Pupil: "Pints."

NEW ZEALAND.

Dunedin (17/4/31).—Reilly's Central Produce Mart report prices as follows:—Grapes, local, 1/- to 1/4 lb.; Gros Colmars, 1/6½ to 1/9 lb. Peaches, 5/6 case. Plums, 4/6 to 6/6 case. Raspberries, buckets, 8/-. Blackberries, cultivated, buckets, 8/6 to 10/6. Apples, Jons., choice 6/- to 8/-, small 4/- to 5/-, cookers 5/6 to 6/6, Del. 7/- to 10/6, Cox's, choice 10/- to 13/6, small 6/- to 8/-. Pears, Conference, 6/- to 8/-; Winter Coles, 7/- to 9/-. Californian Navels, 35/-. Mission Lemons, 45/-. Grapefruit, 37/6. Passions, "Socro," 1/- dozen. Pines, 20/-. Bananas, ripe, 30/-.

MELBOURNE WHOLESALE FRUIT MARKET.

The Melbourne Wholesale Fruit Market during April presented a very listless appearance. With the exception of tropical fruits and small consignments of Queensland Oranges, little trade was done. Ohanez Grapes were in good demand, but the supply was very limited. Other Grapes were practically off the market at the end of the month. Peas and beans proved to be a good sideline for some of the merchants, and the results obtained from this source helped considerably in taking the edge off a very unprofitable month. Many of the merchants have reduced the number of employees usually engaged by them, ample evidence that the fruit trade has been hit just as hard as other industries.

Busier times are looked for as the citrus season approaches.

THE MELBOURNE AND METROPOLITAN RETAIL FRUITERERS' ASSOCIATION.

The monthly meeting of the Executive of the Melbourne and Metropolitan Retail Fruiterers' Association was held in the Temperance Hall on April 9, a large attendance of delegates being present.

Amongst the correspondence received was an invitation to this Association to become a foundation member of the proposed Victorian Fruit Council, to be formed from the sectional welfare Associations connected with the fruit industry.

It was decided that delegates attend the next meeting of the Council and report on same at next meeting.

Many complaints were made in reference to the large amount of windfall and inferior Apples on the market, and it was decided to draw the attention of the Inspectors to the matter.

As regards shortweight packages of peas and beans there were many instances quoted, and members again expressed their regret because of the laxity of the Agricultural Department in reference to same.

Comments on Trade.

Business during the past month has shown no improvement whatever, and reporting of same seems to be getting quite monotonous. No one seems to buy any more than the real necessities, and then only in very small quantities. Fruit is still reasonably cheap, but still the public are unable to purchase, and although Oranges have never been so cheap and of such good quality at this time of the year, the sale is very limited, the same remarks apply to Passionfruit, Pineapples and Pears also. Shopkeepers are not selling the quantity of Apples they should be, owing to the large number of hawkers selling same in most of the suburbs, especially the industrial ones, these Apples are being sold in buckets, tin billies, or any other receptacles. It is very mysterious how some of these Apples are ever brought out of the orchards, of course the Inspectors cannot be everywhere. Vegetables are also selling in very limited quantities, although prices are exceedingly low.—Edw. W. Thompson, Secretary, Melbourne and Metropolitan Retail Fruiterers' Association.

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G.P.O., Melbourne.

Cincturing Citrus Trees.

AN INTERESTING REPORT covering the 1929-30 experiments on the "Cincturing of Citrus Trees," is given by Mr. D. D. Brown, Citrus Supervisor, Swan Hill, in the "Victorian Journal of Agriculture." These tests were conducted under the supervision of Mr. S. A. Cock, Government Citriculturist.

At Tresco, the experiments were carried out in the grove of Mr. A. Milne. The trees selected were tall and typically off type and noted for poor bearing qualities. Cincturing was carried out with a strong, sharp knife, a single cut being made on the trunk through the cambium into the wood. No bark was taken out as done with zante Currants. Fifteen well-known light bearing trees were selected. Four trees were treated on October 22 during blossoming; four companion trees were left untouched for check purposes. A month later (on the November 21), four other trees were cinctured, and three were left as checks. The trees cinctured on October 22, 1929, yielded 2,269 fruits the check trees, 1,080. The four trees cinctured on November 21, yield 2,829 fruits and the three uncinctured check trees yielded 293 fruits. It will be observed, continues the report, that every cinctured tree, except one, was heavier than from any checked tree. The exception had in no previous season set more than a dozen fruit; in all probability another cincturing this season will still further help its productivity. A noticeable feature of the experiment was the uniformity with which the fruit was borne on all the branches of the cinctured tree, the branches on the exposed side carrying almost as much as those on the sheltered side. It was noticed at blossoming time that the check tree flowered freely on both sides, but the blossoms on their exposed side did not yield a fair proportion of fruit.

The yields from the cinctured trees indicate that the temporary withholding of carbohydrates from the roots has given the trees the necessary strength to hold their crops against strong winds, which were very severe last spring.

It must not be supposed from the results of this test that the size or quality of fruit from "off-type" trees can be materially improved by cincturing, for such is not the case, nor must it be taken for granted that each and every tree will benefit by such treatment. Much harm may result in indiscriminate cincturing; therefore it is very necessary that the habits of the tree or trees should be studied before any cincturing is attempted.

In carrying out the experiments the active help and co-operation of the owner of the grove (Mr. A. Milne) was willingly given. Thanks are also due to the management of the Tresco Packing Shed for sizing the fruit of each tree separately so that a count of the various sized fruits could be easily made.

* * *

For the better understanding of the principles governing cincturing, perhaps a brief explanation as to why the practice is resorted to will make the results of the test more interesting. The theory is advanced that all plant food in liquid form is absorbed by the root hairs, and by a system of osmosis is diffused through the minute vessels in the wood to the various parts of the tree, ultimately reaching the leaves, where it is utilised. The leaves, with the assimilation of the carbon dioxide of the air, throw off oxygen, and, retaining the carbon, manufacture elaborated substances through the agency of the chlorophyll and sunlight. These elaborated substances are in turn taken down to the roots through the cortical layers, thus making the action between leaf and root reciprocal. Any injury, therefore, to the cortical layers deprives the roots of return food as long as the wound remains open, and such elaborated substances are

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instead utilised in the formation of fruit. This might explain why trees affected with any collar rot lesion bear abnormal crops for a year or two previous to death. All fruit in normal trees is the product of excess elaborated substances over root requirements. If the roots are obtaining more than their share, the trees grow very strongly at the expense of the crop.

EXPERIMENTS AT WANGARRATTA AND SHEPPARTON.

(By W. A. Rolfe, Citrus Supervisor, Shepparton.)

Wangaratta.

CINCTURING TESTS at Wangaratta, two years ago, on shy-bearing Navel Orange trees, indicated that the operation might lead to increased yield if carried out during the petal-falling stage. Experiments were therefore continued last season in the grove of Messrs. Larkings and Woolcox, Wangaratta.

On October 23, four trees were cinctured, a simple cut being made around the trunk of each tree through the cambium layer into the wood. At the time these trees were cinctured they were at the bud stage.

On November 13 another four trees were cinctured in the same manner; the trees were at this time just dropping their petals.

The dry conditions during last summer, in the Wangaratta district, were severe on citrus trees. The trees in the row in which the check trees for this test were situated dropped practically all their fruits and nearly all their foliage. The counts in the test were made in late September, 1930; they were as follows:—

Row 4. Cinctured in Bud Stage.
Trees 1 to 4—Fruits—136, 166, 336, 393—Total 1,031.

Row 5. Check.
Trees 1 to 4—Fruits—139, 283, 176, 333—Total 931.

Row 6. Cinctured when Petals were Falling.
Trees 1 to 4—Fruits—396, 493, 439, 373—Total 1,701.

In the latter experiment the fruit on the check trees was not counted. The trees had suffered so severely from the dry conditions in the part of the grove in which they were growing, that no fair comparison could be made.

The twelve trees whose fruit was counted (four trees cinctured at the bud stage, four check trees, and four cinctured when the petals were falling) had all suffered about equally.

Shepparton.

On October 25, 1929, four of a block of vigorous-growing Navel Orange trees in the grove of Mr. W. Mulcony were cinctured in a similar manner to those experimented with at Wangaratta (one single cut around the trunk). At the time of this cincturing the trees were at the bud stage. Three weeks later, on November 15, at the time when the petals were falling, four more trees were cinctured.

"Fruit World Annual"

Comprehensive review of Australian and New Zealand fruit industry.

"The Fruit World,"
Box 1944, G.P.O.,
Melbourne.

FRUIT TREES
Citrus Deciduous Roses Ornamentals
QUALITY VERY PRIME FOR 1931
STARTLING REDUCTIONS IN PRICE
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Has had Orchard Training and is Seeking Experience.
Experience cultivating and ploughing, also drying fruit.
First-class references.
R.N.T., "Fruit World," Box 1944,, G.P.O., Melb.

CLENSEL
Insecticide and Fungicide
BRITISH PRODUCT
Information from—
BRUCE ANDERSON,
54a Hoddle St., Abbotsford. Tel. J 4272.

In September, 1930, the fruit from these trees and companion trees that had been set aside as checks was counted. The counts were:—

Row 2. Cinctured in Bud Stage.
Trees 2 to 5—584, 808, 522, 867—Total 2,781.
Row 3. Check.
Trees 2 to 5—488, 762, 774, 670—Total 2,694.
Row 4. Cinctured when Petals were Falling.
Trees 2 to 5—716, 667, 830, 809—Total 3,022.
Row 5. Check.
Trees 2 to 5—497, 419, 560, 730—Total 2,206.

The results show that shy-bearing trees are somewhat benefited by the single-cut cincture made when most of the petals have fallen.

Those cinctured in the bud stage showed a slight increase, but such an increase might possibly be due to variation in the size of the trees, though in selecting trees for the experiment those with as little variation as possible were chosen.

WHY HE COULD NOT PAY.

Primary Producer's Protest.

The following letter, received by a country storekeeper from a farmer, will give some idea of the state of mind that prevails among producers. The letter was an answer to a request for a cheque.

"For the following reasons I am unable to send you the cheque for which you ask: I am being held up, held down, sand-bagged, walked upon, sat upon, flattened out, and squeezed by the income tax, the super tax, the sales tax, the wages tax, the endowment tax, the tobacco tax, the beer tax, and by every other society, organisation and club the inventive mind of man can think of, to extract what I may not have in my possession.

"The Government has governed my business till I don't know who owns it. I am inspected, suspected, examined, and re-examined, informed, required and commanded. So that I don't know who I am, where I am, or why I am here at all—all that I know is that I am supposed to have an inexhaustible supply of money for every desire or hope of the human race, and because I will not go and beg, borrow, or steal to give away, I am cussed discussed, boycotted, talked to, talked about, lied about, help up, hung up, robbed, and nearly ruined. The only reason why I am clinging to life at all is to see what is going to happen next."

M. ASVARISCH
FRUIT BROKER
Copenhagen - Denmark

Consignments Received. Jorks Passage.
Telegraphic Address: Asvarisch, Copenhagen.

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The best and most reliable sprayer known. Easy to operate—no chocked nozzles.
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Fruit and Ornamental Trees
Grown for Sale by
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Regular weekly service of **Fast, Modern, Passenger Steamers,** fitted with ventilated 'tween decks and Refrigerator Chambers.

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Has 14,750,000 Consumers Within 75 Miles' Radius of Its Markets—more than there are within a similar radius round London.

Much of the fruit and other produce landed in London and other ports is railed or transhipped to Manchester for sale and distribution amongst this enormous population. The producer pays (directly or indirectly) the extra transport charges involved, plus intermediate commissions and profits.

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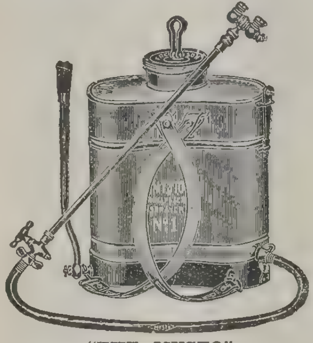

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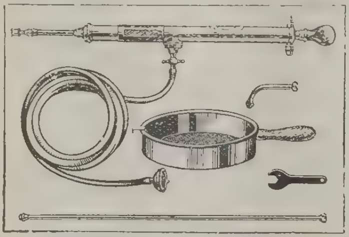

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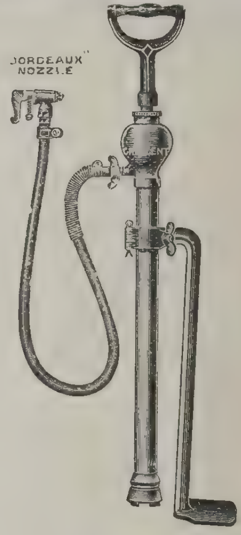

Nº 33

THE "NO. 33" BUCKET SPRAY PUMP.

Specially suitable for Whitewashing, Disinfecting, Washing down Motors and other Vehicles, etc. Complete with 3ft. Hose, 15in. Brass Extension Rod, and Bordeaux Nozzle. **Price, 27/6.**

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Similar to the "No. 33," but slightly smaller. Complete with 5ft. Hose, Brass Extension and 2-way Nozzle. **Price, 24/-.**

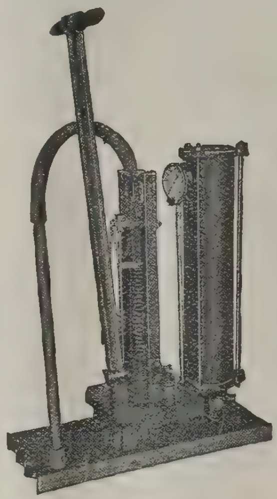
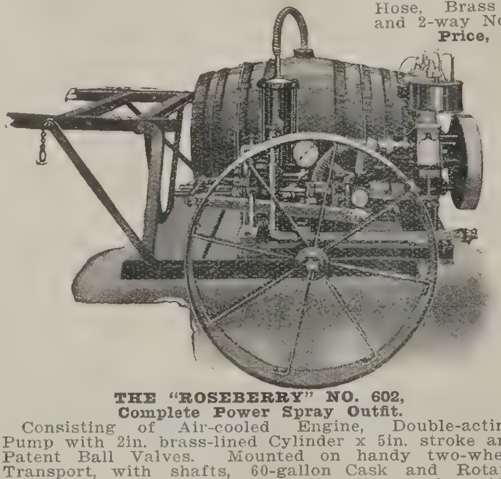


Fig. 513.—Hand Power Spray Pump. One of the most powerful hand pumps made. It is also most efficient for applying whitewash, kalsomine and other water paints.

There is only one plunger and two valves in the pump, and a large airchamber to maintain even pressure. The Cylinder is 2½in. dia., Porcelain lined and non-corrosive. Fitted with 1in. Bronze Ball Valves with reversible and interchangeable seats. Pump, as illustrated, with Pressure Gauge, Suction Hose and Strainer and Hose Nipple. **Price £19/10/-.**



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Complete Power Spray Outfit.

Consisting of Air-cooled Engine, Double-acting Pump with 2in. brass-lined Cylinder x 5in. stroke and Patent Ball Valves. Mounted on handy two-wheel Transport, with shafts, 60-gallon Cask and Rotary Agitator. Transport wheels 36in. dia. x 4in. wide. Complete with Pressure Gauge, Relief Valves, Suction Hose, and Strainer. Two 30ft. lengths of Special Spray Hose, 2 Angle Nozzles and Fittings. **Price £102/10/-.**

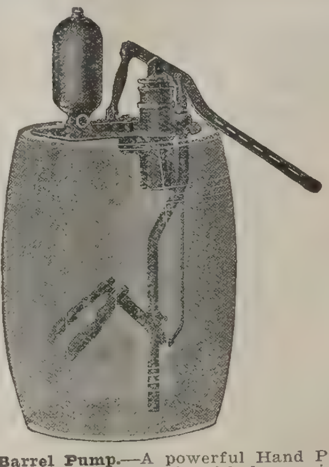

Fig. 502.—Barrel Pump.—A powerful Hand Pump to mount on end or side of Barrel, with large air-chamber. The Pump casting and base are in one piece.

Brass Plunger 2in. dia. x 4in. stroke. Patent combination suction and Discharge Ball Valves, Twin Paddle Agitator.

Complete with Suction Pipe and Strainer and Agitator for mounting on end of barrel.

Price £8 (Barrel extra).

Special Casting for Mounting on Side of Barrel, 24/- extra.

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Get in touch to-day with your Trade Paper representative and obtain full particulars regarding the most effective presentation of your message.

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AUTHORISED BY THE AUSTRALIAN MONTHLY NEWSPAPERS ASSOCIATION

AMNA-5

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FRUIT GROWERS generally have come to depend on "Elephant" Brand Sprays. They find them absolutely reliable, efficient and of guaranteed quality.

For this Season Use Only
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Spray Now with

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Prepared Red Oil

PRICE IS COMPETITIVE — QUALITY STANDS ALONE

ONCE USED, ALWAYS USED

Remember :—"ELEPHANT" BRAND Stands for Quality

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NEW COMPANIES.

Wilson (Herbert) Pty. Ltd. Registered Office: 10 Queen Victoria Markets, Melbourne. Registered April 28. Objects: To acquire the business of a wholesale and retail fruit merchant and commission agent carried on by Herbert Wilson. Capital: £10,000 in £1 shares. Names subscribed to memorandum: Herbert Wilson (director), 1 share; Hyman Bennett Grinblat, 1 share; William Edward Branson, 1 share.

Associated Dried Fruits Sales Ltd. Registered April 28. Head Office: 58 Margaret-street, Sydney, N.S.W. Agent in Victoria: Herbert Russell Jones, 16-24 Jeffcott-street, Melbourne. Capital: £10,000 in £1 shares. Directors: Arthur Leslie Johnstone, Edward James Roberts, Frederick William Paley Hammett, Herbert Douglas Howie, Medbury Wallis Nicholas, Herbert Edward Palmer and Joseph Henry Deeble.

THE Y.M.C.A. TEACHES GARDENING TO INDIANS.

Education is one of the important objectives of the Y.M.C.A., and in a country like India the spheres of educational activity are practical as well as cultural. The Rural Re-construction Centre at Ramanathapuram is making experiments in the co-operative marketing of Tomatoes. Seedling Tomatoes raised at this centre from English seed have been distributed to villagers with the result that upwards of fifty villages are now growing Tomatoes. More than a thousand pounds have been marketed in one month from back-yard gardens.

FRUIT PROPAGANDA URGED.

Fruit is Best Food—Not a Luxury.

THAT FRUITGROWERS and distributors should unite in an effective programme to increase fruit consumption, is urged by "Rejuvenated," who supplied the article "Why Not Fruit Kings" in the March "Fruit World."

Our contributor writes.—

Baden Powell's triumphant tour of Australia, inspecting the great multitude of bright, alert Boy Scouts, is truly an enthusing example of the power of A Good Idea developed by Action. The growth of this wonderful organisation, now world-wide, started from a unit not many years ago, and should be an inspiration to the fruitgrowers and distributors of Victoria to organise actively.

The Good Idea—Fruit Best Food—was outlined in March issue of "Fruit World" (page 148), and just as the Boy Scout Movement has spread, just as surely will the "Fruit Best Food" movement spread throughout the Commonwealth, if actively propounded.

Let me urge you, all Fruit Men, to throw off the shackles of pessimism that holds you in bondage to the wrong thought—limited output in the home market.

Unfurl the "Banner of Optimism." Get seized with the great outstanding fact that you are handling the world's best product. Realise the almost limitless opportunity you have for the increase of home consumption for dried, citrus, deciduous fruits, nuts, etc.

I can visualise, with right propaganda, the whole of your present output being consumed in the Commonwealth.

Act now! Go ahead whole-heartedly! Preach the Gospel—"Fruit Best Food"—by example, by precept, and with well directed propaganda: aim to rid the consciousness of the community of the erroneous idea that fruit is a luxury—unable to sustain man—and replace it with the true idea **"Fruit Best Food—Best Drink."**

I can vouch the efficacy of fruit to make man do the most strenuous work—after ten years as a fruitarian at 63, I am more fit than at 23.

Fruit, including nuts, Raisins, etc., should be the staple food of Australians.

As a start off, have one fruit meal daily, and wonderful results will ensue for the good of all concerned. With the active co-operation and right thought of all fruit men, Australia will become "The Fruit Man's Paradise" —Paradise Regained. Cattle Kings will abdicate and Fruit Kings be enthroned.

Instead of being second-hand feeders through the animal kingdom, the food of the Gods—the golden fruit direct from Nature—will delight the eye and please the palate of the people of Victoria, bringing a sparkle to the eyes and a bloom to the cheek that will be the envy of less favored people.

This is the sincere wish of one

REJUVENATED.

AUSTRALIAN PRIMARY PRODUCERS.

Efforts to Restore National Confidence and Prosperity.

THE PRIMARY PRODUCERS' Restoration of Industry Movement has been launched in all the States and the movement is well supported.

Primary producers need no convincing as to the value of their enterprise in tiding Australia through the present crisis.

At a recent meeting of the Executive Committee it was emphasised that the first essential was a restoration of confidence and the re-establishment of public credit.

The Council stood for the honorable discharge of all financial obligations, opposed inflation and artificial attempts to vary the incidence of the law of supply and demand.

A reduction of costs was necessary, and the Council has prepared constructive proposals for (a) the curtailment of Government expenditure, (b) reduction of taxation, (c) reduction in all the factors affecting the cost of production, including the suspension of all industrial awards framed under inflationary conditions, and (d) a practical modification of the existing tariff.

The foregoing was contained in a letter to hand from Mr. Henry Schwieger, Secretary of the Victorian Chamber of Agriculture.

AUSTRALIAN VEGETABLES AND FRUIT FOR CHINA.

Mr. P. Alderton, manager in Melbourne for Messrs. Macdonald, Hamilton & Co., agents for the P. and O. line, who recently returned from a visit to China, was impressed by the prospects for the development of an Australian export trade in vegetables to China for consumption by the European population.

Mr. Alderton stated that the unhygienic conditions in which vegetables were grown there prohibited their use by Europeans. The United States had a strong hold on the fruit markets in the East, where even fresh Californian Strawberries were obtainable.

Mr. Alderton further stated he saw no reason why Australia should not establish effectively its own claims in these markets for the supply of vegetables, Oranges and dairy produce.

CLEAN TOBACCO SEED.

Tobacco-growers have been advised by the Federal authorities that tobacco seed free from blue mould is being imported from the United States for planting this season. Fourteen varieties have been ordered, and will be supplied to growers at cost price. Applications should be made to Mr. B. T. Dickson, acting director, Australian tobacco investigation.

"Fruit World" Appreciation.

The Editor, "Fruit World."

Herewith please find P. notes valued 8/6, being my subscription for the coming year. The best appreciation of any paper is continued support. There is always something of interest and help in the "Fruit World." With best wishes.—Sincerely yours (signed) **"E.F.P.,"** Curlwaa, N.S.W.

PERSONAL.

Mr. H. S. Taylor, editor of the "Murray Pioneer" and the "Australian Dried Fruits News," who was recently in ill-health, is now showing marked improvement, and it is hoped he will shortly be about again.

A Popular Secretary.—At the annual Conference of the Cool Stores' Association of Victoria, keen appreciation was expressed regarding the services of the Secretary, Mr. J. G. Aird.

Brogdex Patents Invalid.

Citrus Growers and Packers can Use Borax Treatment Freely.

Six-year Litigation Ended by Important Legal Decision in U.S.A.

IMPORTANT NEWS for citrus men in Australia is contained in a report published in the April issue of "Better Fruit" as follows:—

Fruitgrowers and packers generally are granted the rights to use the borax bath method of fresh fruit preservation, in a decision just handed down in the Supreme Court of the United States by Justice McReynolds, in the suit of the American Fruitgrowers Inc., contesting the validity of the Brogdex patent for treating fresh fruit and vegetables.

The decision reverses the opinions of two lower courts and terminates litigation extending over a six-year period.

In its brief to the Supreme Court the American Fruitgrowers' Company contended that it would be in the nature of a calamity, affecting every fruit and vegetable grower, shipper and distributor in the United States, if a patent monopoly could be maintained on a substance which has been in common use as an antiseptic and preservative for more than 20 years preceding the Brogdex patent.

Confronted with two previous decisions, the American Fruitgrowers carried its fight to the Supreme Court with the conviction that a fundamental principle was involved in protecting the public, as well as the grower and shipper, from the imposition of higher prices on produce, due to the payment of royalties for a simple process of treatment with a borax or boric acid solution. It was brought out in the course of hearings that the borax wash had been in use by the fruit industry and other vegetable shippers many years prior to the granting of the Brogdex patent.

It is believed the decision of the Court destroys the grounds for the suit now pending against the California Fruitgrowers' Exchange, in which they were charged, not with using the process, but with having sold large quantities of Oranges in which borax was present. The opinion of Justice McReynolds not only sets aside the patent on the use of borax, but also holds that no one can be held liable under any circumstances of dealing in fresh fruits and vegetables containing borax.

CITRUS WASTE AS FERTILISER.

Nitrogen, Phosphoric Acid and Potash.

ACCORDING TO REPORTS recently issued by officials of the American Cyanamid Co., successful experiments have been completed at the Company's plant on the Alafia River, Florida, by which the refuse of citrus canning and juice extracting plants is converted into a new and extremely valuable fertilising material (states the Commonwealth Department for Markets and Transport). The experiments prove that the skins, seeds and "bag" of Grapefruit and Oranges can be made into a fertiliser containing more than 4½ per cent. of nitrogen (ammonia in the form of urea), on a practical commercial scale, and cheaply enough to be used extensively in the production of a variety of crops, particularly of legumes.

Describing the product and the method of manufacture, the company's statement says the citrus refuse or waste is first partly dried and ground into a rather coarse mealy mass, which is then mixed with definite proportions of cyanamid of a certain consistency. After thorough mixing the material is composted for a period of 15 days, during which time chemical reactions occur which change the cyanamid into the urea form of ammonia, which is said to be the most valuable form of ammonia for fertilising purposes.

The finished material also contains definite proportions of phosphoric acid and potash. It was stated that utilisation of these waste materials will mean that Grapefruit refuse from canneries will hereafter be an item of profit, and that manufacture of the new fertiliser on a large scale is to be begun in the immediate future. The new fertiliser has been given the name of cytrohumus. J. H. Rickborn, Orlando, State Agriculturist for the American Cyanamid Co., has conducted experiments with the new fertiliser for several months, and these tests are being continued on practically every soil type and with all principal crops grown in Florida. Experimental work so far has been uniformly successful, the company's statement asserts.

ORANGE AND LEMON TREES.

"Orchardist," Tatura, asks:—"What is a good cure to stop very old Orange and Lemon trees from gumming in the trunk, and also to stop Navel Oranges from splitting, too?"

Answer (by J. M. Ward, Superintendent of Horticulture):—The gumming of the trunks of Orange and Lemon trees is probably due to collar rot. The treatment consists of cutting away the diseased area, which is brown in color, until the healthy white and green wood and bark are exposed. The surface should then be coated with a Bordeaux paste, made by mixing equal parts of lime and copper sulphate (bluestone), with sufficient water to form a paste. All chippings of diseased bark should be collected and destroyed by burning. Dusting the soil around the trunk of the tree with lime is an additional preventative. Water should not be allowed to stand around the trunk.

The splitting of Navel Oranges is fairly prevalent in the Goulburn Valley, and appears to be caused by fluctuating moisture conditions within the tree. It may be largely minimised by careful attention to irrigation.

LEMON CURING.

Success With Paraffin in N.S.W.

SATISFACTORY RESULTS have been obtained in N.S.W. with the use of paraffin for curing Lemons. Mr. R. J. Benton, Special Fruit Instructor, Department of Agriculture, states that Lemons which had a light treatment with paraffin kept very well. Mr. G. Hughes, of Pennant Hills, had attained success in Lemon curing with paraffin. Fruit thus treated brought 4/- a case more than that untreated.

As a fairly expensive plant was necessary, growers would do well to organise co-operatively to undertake this work.

FROST AND FRUIT TREES.

Interesting Evidence in New South Wales.

THE EFFECT OF FROST on various fruit trees formed the subject of evidence given recently before the Horticultural Review Board at Griffith, N.S.W.

The severity of frost in winter was the main factor causing damage to citrus, but it was the late frosts in spring that damaged vines and deciduous trees, stated Mr. West. It was, therefore, possible for a year to be comparatively mild as regards citrus, although much damage might be done to vines, Apricots, etc. Such a year was 1930, when two late frosts in September were as severe as any of the winter frosts, and did much damage to vines, although the citrus did not suffer. A position where winter frost was severe was also very liable to damaging late frosts.

Mr. West said he knew of young citrus trees which had experienced a temperature of 24.5 deg. and yet no damage was done to them. The trees were, of course, properly protected, the butts being wrapped with paper and mounded with soil outside the paper, the soil not coming in contact with the stem.

The following table showed the temperature (Fahrenheit), which various classes of fruit could stand without suffering damage, provided the trees or vines were in a healthy condition and cultivation and moisture content of the soil satisfactory:—

Variety	Buds Showing Color..	In full Bloom.	Fruit Setting.
Apples	27	29	30
Apricots	30	31	32
Almonds	28	30	31
Grapes	31	32	32
Pears	28	29	30
Peaches	25	28	30
Plums	30	31	31
Oranges	—	30	30

* * * * *

In connection with the effect of frost on fruit trees or vines other factors such as conditions of the soil, whether water-logged, salty, badly cultivated, or too dry, had a distinct bearing on the amount of damage which a frost of any given temperature would cause; thus, if plantings were unthrifty from any of the above causes or from any other cause, frost damage would be more severe. There was no definite evidence that weeds or grass caused lower temperatures, but their effect in drying the soil out had a re-action on the amonut of frost damage suffered by the plantings. Healthy trees growing under good conditions of soil and cultivation would stand much lower temperatures without damage than trees whose vitality had been lowered through bad treatment.

SPRAY PRICE REDUCTION.

Messrs. William Cooper & Nephews (Aust.) Ltd., advise that owing to the adverse conditions affecting the fruitgrowing industry at the present time, they have decided to reduce prices for the coming season as follows:—Arsinette (56 lb. cases), reduced from 1/8 to 1/6 per lb. Alboleum (40 gall. drums), reduced from 7/- to 6/3 per gall.; (5 gall. drums), reduced from 7/6 to 6/9 per gall.

Two new products have now been manufactured by this firm. These are "Ovicide" and "Bordinette." "Ovicide" is a tar oil which has given 100 per cent. results in Government tests in N.S.W. against Peach aphis.

"Bordinette" is a fungicide for the control of fungus diseases attacking fruit, flowers and vegetables.

AUSTRALIAN DRIED FRUITS.

Sales in Great Britain.

ACCORDING TO ADVICES received by the Commonwealth Dried Fruits Export Control Board, 1,051 tons of Australian dried fruits were placed in British markets during the week ending May 21. The total value of the sales was £44,750.

Of new season's Sultanas, 251 tons realised an average price of £57/13/4, and 102 tons of Currants were sold at an average price of £43/8/4 per ton.

From the limited carry-over of last season's Sultanas, 620 tons were sold at an average of £38/18/4, this average price being affected by the inclusion in the sales of some low quality fruit.

The market continues steady, and the quantity of old season's fruit still remaining in first hands is now reduced to 4,147 tons Sultanas, compared with 7,127 tons on hand at the corresponding period of last year.

Shipments of new season's fruit to Britisn ports to date cover 18,578 tons.

PACKING COMPANIES MERGE.

Red Sun Co. at Red Cliffs Absorbed by Red Cliffs Co-operative Co.

In order to effect economies along the lines of the recommendations of the Development and Migration Commission, the Red Sun Packing Co. Pty. Ltd., of Red Cliffs, has been absorbed by the Red Cliffs Co-operative Co. Ltd. Mr. A. Henshall, managing director of the Red Sun Co., stated he would stay temporarily in Red Cliffs to adjust the affairs of the growers under the new regime.

BRITAIN RESTRICTS APPLE IMPORTS.

1930 Regulation Made Permanent.

Low Grade Apples Prohibited.

The order of June 21, 1930, of the British Ministry of Agriculture, which, in effect, prohibited the imports of Apples from the United States between July 1 and November 15, except those certified by the United States Department of Agriculture as falling within the two higher grades recognised by that Department for both boxed and barrelled Apples, has been made permanent, according to a cable from Fred A. Motz, fruit specialist in Europe for the Foreign Service of the U.S.A. Department of Agriculture. Last year no barrelled or basketed Apples below U.S. No. 1 or boxed Apples below fancy were permitted to enter the British market during the period July 1 to November 15.

WORLD'S SUGAR CROP.

Larger Than Last Season.

The 1930-31 production of cane and beet sugar in 39 countries, for which statistics have been received by the U.S. Department of Agriculture, shows an increase of 4.5 per cent. over the 1929-30 season, according to latest estimates received from official sources and the International Institute of Agriculture. The total production in these countries which represent about 83 per cent. of the world crop is now placed at 26,079,854 short tons, as compared with 24,946,236 short tons reported for the 1929-30 season.

Fruitgrowers Cool Stores Association

Successful Conference at Blackburn

THE ANNUAL CONFERENCE of the Fruitgrowers' Cool Stores' Association of Victoria was held at Blackburn on May 26, 1931, Mr. A. E. Hocking presiding.

About a hundred delegates attended from various parts of the State. Major A. J. Arnot attended from Batlow, N.S.W., and was cordially welcomed.

Minister Opens Conference.

In introducing the Assistant Minister for Agriculture (Mr. Pollard) to open the Conference, the President, Mr. A. E. Hocking said that the growers represented by the Cool Stores had developed their businesses largely through efficient co-operative effort, private enterprise, with a minimum of Government assistance. The Department of Agriculture was doing a lot for the industry, and their services were appreciated. He hoped there would be no curtailment of scientific research, especially as regards soil analyses, manuring and orchard cultural practice.

The Assistant Minister of Agriculture (Mr. Pollard) said he was pleased that there had been no official complaints from England this season regarding the quality and packing of the fruit. This might be due to the lesser quantity which had gone forward, or was it due to the greater care in packing and supervision? The Superintendent of Horticulture (Mr. Ward) and his officers were to be commended for their efficiency. Last season the quantities shipped were 800,000 cases of Apples and 153,000 cases of Pears. This season 360,000 cases of Apples had been sent, and the record quantity of Pears, viz., 194,000 cases, with another 10,000 to go. The primary producers had an important part to play in the rehabilitation of the affairs of the Commonwealth. A vote of thanks was conveyed, on the resolution of Messrs. J. H. Lang and F. Moore.

Annual Report.

In the annual report the Secretary, Mr. J. G. Aird, referred to the formation of the Victorian Fruit Council and the adverse effect of the sugar agreement on the fruit industry.

Railway Freights.—The Association continued its representations to the Railways Department for further concessions on inter-system fresh fruit rates. The Victorian Department acceded to the request, and now carries fresh fruit for interstate markets at the inter-system rates to or from Melbourne plus the ordinary mileage rates for the distance in excess of 20 miles from Melbourne when cheaper than the local rates applicable to each State concerned. The request that the 21-ton rate be made applicable to 6-ton lots, provided that at least 21 tons was carried on the train, has again been placed before the New South Wales Railways by the Association. Although from the fruitgrowers' point of view this proposition appeared reasonable, the New South Wales Railways declined to make any concession whatever. The only alternative apparently is for fruitgrowers to forward their interstate consignments by steamer. The loss of this freight may probably force the New South Wales Railways to meet the position.

The financial statement showed a credit balance of £90/0/7.

The annual graph of comparative working costs of the various stores was presented to the Conference by Mr. J. W. Barrett, F.C.A. This was adopted, and a hearty vote of thanks extended to Mr. Barrett.

Inspection of Export Fruit.

A resolution was carried as follows:—

"That this Conference places on record its appreciation of the action of the Department of Agriculture in extending the principles of inspecting, in country districts, fruit intended for overseas export, and thus lessening the extra handling entailed by the opening of cases and inspection of the fruit at the ship's side."

Victorian Fruit Council.

It was decided to affiliate, provided at least three other Associations joined.

Electricity Charges.

On the motion of Messrs. Coleman and Lang, it was unanimously resolved that the Electricity Commission be asked to abolish the service charge in connection with cool stores.

Oil Engines v. Electricity.

Mr. Hepburn, engineer, Victoria Dock Cool Store, said that the graph prepared by Mr. Barrett showed that oil engines were much cheaper than electricity, yet taking the broad view we were all shareholders in the Yallourn electricity enterprise, and should support that national work. He suggested that a copy of the graph be sent to the Electricity Commission for their comments. Certainly the service charge should be withdrawn. In America and other places users of power for refrigerating plants received substantial concessions, because the power was used at night, when the load was generally lessened, thus helping the electricity companies to reduce their overheads.

Duty on Spray Materials.

Mr. G. F. Fankhauser moved—"That the Federal Government be requested to allow raw materials used in the manufacture of spray materials to enter Australia free of duty."

He referred in particular to white oil and red oil, kerosene, bluestone, and arsenious acid. Australian fruit had to compete in the world's markets, and these materials should be permitted to enter Australia free of duty.

After discussion, the resolution was altered to read:

"That this Conference requests that all materials used in orchard pest control be permitted entry free of duty," and in this form was carried.

Agricultural Education.

It was decided, on the motion of Messrs. J. H. Lang and F. Thomas—

"That this Conference of fruitgrowers, realising that the prosperity of Australia depends on its primary industries, urges upon the Government the pressing need of teaching the principles of agricultural science in all rural primary and high schools."

Pre-cooling Pears.

Mr. P. Val Kerr (Tyabb) directed attention to a difficulty which had arisen last season with regard to Pears for export. The Tyabb Packing Co., when preparing Pears for shipment per s.s. "Kent" according to schedule, were suddenly advised that the fruit was needed three days earlier, thus cutting out the possibility of pre-cooling. Fortunately the company had other pre-cooled Pears which could be substituted, and this was done. This, however, could not be done by, say, a private grower: in such a case the fruit would either have to be sent unpre-cooled, or else miss the boat, and in the latter instance, would he be liable for dead freight?

The Chairman asked if any others had had similar experiences. None, however, were reported, and no resolution was tabled. Mr. Kerr was thanked for bringing the matter forward so that it could be ventilated.

Cartage Contract.—Mr. Thomas said that until recently the delivery charge for a case of fruit was 1/-: this had been increased to 1/3 under a cartage contract let by the Railways Department to Mayne, Nickless Pty. Ltd. This charge was too high, and would cause a lessening of the business to the detriment of the railways, the carrying company, and the grower. He moved that a letter be sent to the Railways Department protesting against the high cost of cartage provided in the contract.

Mr. T. W. White (Somerville) seconded the motion, which was carried unanimously.

Royal Agricultural Society.—On the motion of Messrs. Lang and Mock, it was decided to ask the Royal Agricultural Society to provide a certificate to the winners of the perpetual shield at the Agricultural Show—as otherwise when the shield was won elsewhere subsequently the prior holders had nothing to show for their efforts.

Speaking on the relative values of dry air and direct expansion, Mr. R. Werner advocated the direct expansion system for both Apples and Pears.

A cordial vote of thanks was expressed to the lecturer.

Mr. A. G. Strickland, M.Ag.Sc., Horticultural Research Officer, Department of Agriculture, read a valued paper on the "Pollination of Fruit Trees." After answering many questions, the lecturer was heartily thanked.

Mr. G. B. Tindale, B.Ag.Sc., Cool Storage Research Officer of the Agricultural Department, capably dealt with the subject of fruit cool storage experiments. He showed by graphs the life of a Williams Pear at varying temperatures. The cold storage of Plums and Peaches was also dealt with. A vote of thanks and appreciation was carried.

The subject of spraying to control orchard pests and diseases was dealt with in an address by Mr. A. A. Hammond, Chief Orchard Supervisor, Department of Agriculture. Many helpful practical points were adduced, and the lecturer was accorded a vote of thanks.

Office-bearers.

Office-bearers were elected as follows:—President, Mr. A. E. Hocking, J.P. (Graceburn Valley); Vice-President, Mr. E. H. Hatfield (Tynong); Auditor, Mr. J. W. Barrett (Ringwood); Council Member to Chamber of Agriculture, Mr. J. H. Lang (Harcourt); Representative to Employers' Federation, Mr. A. E. Hocking; Representative to Southern Fruitgrowers, Mr. J. G. Aird (Ringwood); Representative to Victorian Fruit Council, Mr. A. E. Hocking; Secretary and Treasurer, Mr. J. G. Aird (Ringwood).

Next Conference at Batlow.—It was unanimously decided to hold the next Conference at Batlow, N.S.W. Mr. Arnot expressed pleasure at the decision and assured delegates of a hearty welcome.

The Conference closed with a cordial vote of thanks to the Chairman, Mr. A. E. Hocking.

"LIGHTNING" EQUIPMENT.

Special equipment for fruit packers and growers is offered by the Lightning Fruit Grader Co., of 517 Albion-street, W. Brunswick, Vic. Their sorting elevator is a useful device, handling the fruit without injury: this is of special interest to Orange and Lemon producers just now. The firm also supplies wet washing outfits in sizes for packing houses or for individual growers. Polishing and sizing machines are also on offer. Full details of the foregoing and other valuable equipment is available on application.

AUSTRALIAN APPLE AND PEAR EXPORTS.

3,333,000 Cases to May 16.

STATISTICS showing the exports of Apples and Pears from the Commonwealth to May 16 are to hand from the Minister of Markets and Transport. The total shipments were almost 3,000,000 cases of Apples and more than 333,000 cases of Pears. Glasgow, Hull, and Liverpool were becoming important ports in the Australian Apple trade, he said, taking respectively 115,395, 169,395, and 420,459 cases. Of European ports by far the greatest quantity had been taken by Hamburg, namely, 555,500 cases, or nearly one-fifth of Australia's total export to May 16. Stockholm ranked next with 68,687 cases.

Eastern ports, such as Singapore, received 10,619 cases, Colombo 8,014 cases, and Java 12,014 cases. Shipments of Pears to the United Kingdom were 303,812 cases. Those to European and Eastern ports were very limited, but in the East shipments had been spread, though they were small in quantity, over almost all the principal ports. The figures for each State were as follow:—

	Apples. Cases.	Pears. Cases.
New South Wales	48,283	6,769
Victoria	359,501	194,553
Queensland	3,131	64
South Australia	28,140	5,534
Western Australia	433,947	16,177
Tasmania	2,088,150	110,245
Total	2,961,152	333,342

NEW ORANGE.

On the property of Mr. G. Davis, Rochester, Victoria, there is a large citrus tree about thirty-six years of age, and the opinion was expressed by the late Citriculturist of Victoria (Mr. S. A. Cock) that the tree is a seedling and the result of a cross between a Shaddock and a Queen Orange.

At the Royal Agricultural Society's show in Melbourne last year, a special prize was awarded to fruit grown on this tree.

The fruit is orange in color, slightly smaller than a Grapefruit, with a thin rind of fine texture. The flavor is exceedingly pleasant.

Towards the end of last year the Victorian Department of Agriculture sent a case of this fruit to the Agent-General for Victoria in London, requesting that he should ascertain whether a profitable market could be found for this type of fruit.

A number of these fruit were distributed and the general opinion was that it would be worth cultivating on a limited area for sale as a fancy fruit.

BANANA THRIPS.

Approval has been expressed at the regulation under the Queensland Fruit Marketing Organisation Acts, which authorises the Committee of Direction of Fruit Marketing to offer a reward of £1,000 for an effective control of Banana thrips.

The conditions under which the offer is made are similar to those in respect to the reward for the control of the beetle borer in Bananas.

The Pollination of Fruit Trees

Apples, Pears, Plums, Cherries, Stone Fruits

One Hive of Bees Per Acre Recommended.

A Paper Read by Mr. A. G. Strickland, M.Ag.Sc., Horticultural Research Officer, Before the Fruitgrowers' Cool Stores' Conference.

POLLINATION is of the utmost importance to the fruitgrower, and worthy of the fullest consideration when new plantings are being made, or when trees are not cropping as fully as they should. Modern fruitgrowing tends to the planting of a few selected varieties, and though this is necessary economically, it has, in many cases, resulted in defective pollination and reduced crops. Unless proper provision for pollination is made full crops are impossible.

When trees blossom profusely, and yet fail to set more than a few fruits, lack of pollination should be immediately investigated as a likely reason.

Failure of blossoms to "set," however, is not always due to faulty pollination. Many other factors, such as frosts, cold, windy and wet weather at flowering time, disease and insect injury to blossoms, have an influence.

Soil conditions, as well as pruning practices which upset the balance of tree feeding, also contribute towards poor setting, and all these factors must be considered before finally attributing low yields to faulty pollination. In cases where all these conditions are apparently favorable, and fruit does not set, it is more than probable that the pollination is not effective.

Flower Structure.

In order to appreciate these problems, some knowledge of the flower structure, and of the mechanism of fruit formation, is necessary.

Fruit is most often accompanied by seed, and the production of seed is essentially a sexual process. Blossoms are provided with male and female sexual organs, and in the perfect flower both types are present in the one blossom. The male organs, or stamens, have as their function the production of large numbers of tiny pollen grains, which are shed when ripe. The female organ or pistil consists of a seed case at the base of the flower, containing bodies which will develop into seeds if fertilised in the normal manner. The seed case is surmounted by a long stem, bearing at the top a sticky bulb or stigma; the function of this sticky stigma is to pick up pollen grains which may fall on it, or which may be brought to the flower by bees and other insects.

Self and Cross Fertilisation.

When a pollen grain lodges on the stigma, it is stimulated to send out a fine tube, which goes down the stem of the stigma, and, conditions being favorable, eventually reaches the bodies in the seed case, with which bodies the contents of the pollen grain fuse. This process is termed **fertilisation**, and is the final step in enabling the contents of the seed case to ripen into viable seeds.

When fertilisation has taken place, swelling of the flower parts immediately commences—in other words, the fruit has "set." Should not fertilisation take place within a certain period, the flower drops off the tree and no fruit is formed.

The term pollination describes the application of pollen to the stigma, but in order to obtain fruit the further process of fertilisation is also necessary.

A flower may be fertilised by its own pollen, or pollen from another flower of the same variety, in which case it is said to be **self-fertilised**; when it is fertilised by pollen from flowers of a different variety it is **cross-fertilised**.

Some fruits will set fruit when self-fertilised, and these are termed **self-fruitful**; others, which must be cross-fertilised in order to set fruit are in the **self-unfruitful** class, and those with which the orchardist is most concerned.

The planting of self-unfruitful plants in solid blocks, without any provision for cross pollination must result in reduced yields. Ideal fruits are those which require no pollination, such as the Navel Orange, Zante Currants, etc.

Under certain conditions some Apple and Pear varieties are able to set fruit without pollination, but these are not of any great importance (e.g., Golden Spire Apple).

Most of our varieties of Apples, Pears, Cherries and Plums are either self-unfruitful or partially so. When a fruit is partially self-unfruitful it will set some fruits with its own pollen, but for maximum cropping cross fertilisation is necessary.

Causes of Self-unfruitfulness.

THERE ARE TWO MAIN CONDITIONS which will make a variety dependent upon cross fertilisation for the setting of fruit. These are:—

(a) **Pollen Sterility.**—In this case stamens are imperfect or absent, and either no pollen is formed, or such that is formed is shrivelled and incapable of bringing about fertilisation. For examples we have the La Marguerite Strawberry, which is without stamens, and the Gravenstein Apple, which produces pollen of very poor quality.

(b) **Incompatability.**—This is the cause of the most general type of unfruitfulness. In this case the flower is perfect, and pollination takes place normally, but no fruit results. In other words, the variety will not set fruit when pollinated with its own pollen. In extreme cases there is complete self incompatability, in which case the variety is self-fruitless, but in the majority of cases, however, we have only partial incompatability, i.e., a small quantity of fruit will be set by self-pollination.

As well as this phenomena of self incompatability, we have also cross-incompatability between varieties. This means that certain varieties are of no use for cross fertilising certain other varieties, e.g., the European type of Plum is of no use for pollinating the Japanese Plum. Just as in the case of self incompatability, we may get degrees of cross incompatability, and some pairs of varieties are only partially cross incompatible, i.e., they will set a limited number of fruit when cross-pollinated.

Summarising the foregoing, it is seen that—

(a) Some varieties are fully self-fruitful and may be grown in solid blocks without reduction of yield.

(b) Some varieties are fully or partially self-unfruitful, and must be planted in mixed blocks in order to get maximul yields.

(c) Some varieties are of no use as inter-pollinisers, and when selecting pollinisers, choice must be made of those varieties which will effectively pollinate each other.

Factors Influencing Effective Pollination.

Proper fertilisation is dependent on—

1. The presence of suitable varieties for inter-pollination if the main variety is self-unfruitful.

2. The presence of insects, such as bees, to enable the distribution of pollen from flower to flower. Wind is

quite unimportant in distributing pollen, except in the case of nuts, and it may be said that 99 per cent. of all fertilised blooms

owe their pollination to bees

or other insects, and the remaining 1 per cent. to wind. Under certain unfavorable weather conditions there may not be a sufficient number of bees in the orchard to ensure proper pollination, and for this reason it is worth while for the grower to make arrangements for the distribution of hives throughout his orchard during blooming.

It is generally considered that one hive of bees to each acre of mature trees is sufficient to ensure effective pollen distribution.

3. Where inter-pollination is necessary the inter-pollinating varieties must bloom at the same time. The mistake is sometimes made of planting Rome Beauty with such a variety as Jonathan, which finishes blooming before the blossoms of the former are even open.

It is advisable for the blossoming period of two varieties to overlap at least one week, as seasonal variations may cause slight fluctuations from recorded blooming dates. In Bulletin No. 58 of the Victorian Department of Agriculture, the blooming dates of various fruits in various districts are tabulated in detail, and from a study of these tables it is an easy matter to obtain varieties which bloom simultaneously.

It does not follow, however, that because two varieties blossom at the same time, or slightly overlap, that they are suitable for cross-pollination. It is also necessary that they should be compatible—the pollen of one should be acceptable to the pistils of the other. In the U.S.A. some Apples are found to cross-pollinate better than others. It is undoubted that a similar difference exists in Australia, but until extensive experiments have been carried out it is very hard to make any statement about incompatibility between varieties.

The methods used in determining information on the

fruitfulness of varieties

entail a considerable amount of labor. Briefly, they consist of tests of pollen germination, tenting of entire trees with bees enclosed, and controlled crossing experiments. Such experiments in America have yielded information which is a useful guide in Australia, but which cannot be applied entirely, owing to the effect of climate and other factors on pollination phenomena.

I now intend to deal briefly with the various fruits, indicating as far as possible their pollination requirements as evidenced by overseas experiments and local experience.

Apples Generally Self-unfruitful.

Nearly all varieties of Apples are partially or completely self-unfruitful, and it is generally admitted that no single variety can be advantageously planted alone. It may be held that in certain seasons, such varieties as Jonathan and London Pippin will produce good crops without the aid of a polleniser; the reason for this is not known, but the fact remains that better and more regular crops will result if these varieties are interplanted. It appears that there are no decided cases of cross incompatibility between Apples, which means that with certain exceptions, most Apple varieties that bloom synchronously, will successfully interpollinate each other. In U.S.A. it has been shown that the pollen of Gravenstein has a very low percentage of viable grains, which results in Gravenstein being of little use as an interpolleniser. Although we have not, as yet, confirmed this fact under Australian conditions, it seems likely that the same applies here.

Baldwin and Rhode Island Greening also have very poor pollen. It may, therefore, be said that so far as Apples are concerned, varieties which produce good pollen, and which bloom at the same time, are satisfactory for interplanting.

Pears.

Many varieties of Pears will set better crops if pollinated with other varieties; Williams B.C. or Bartlett is generally regarded as self-fruitful, but we have evidence that under some conditions it may be almost totally self-unfruitful. In certain parts of U.S.A., Williams have been shown to be self-fruitful to a degree, and in others entirely self-unfruitful. Williams will give better results if interplanted with Beurre Bosc, Beurre d'Anjou, or Winter Nelis. Keiffer Pears are partially self-unfruitful, and should be interplanted with Beurre Clairgeau or Howell, etc.

Plums.

Many varieties of **Japanese Plums** are self-unfruitful, and should not be planted in solid blocks. In this list are included Abundance, Satsuma, Burbank, Wickson, Kelsey, Formosa and Gaviota. Climax, however, is, in some instances, self-fruitful. Practically all Japanese Plums are cross-fruitful with the exception of Formosa and Gaviota. The two latter should not be interplanted, but all others may be.

European Plums.

Several varieties of European Plums are self-unfruitful, e.g., Clyman, Tragedy, Grand Duke, Golden Drop, President, Imperial, Robe de Sergeant, etc., and require interplanting. Prune d'Agen, Sugar, etc., are self-fertile, and set quite well without interpollination. Most European Plums interpollinate each other, provided that they flower simultaneously. Japanese types will not cross with European types, as a general rule, although in U.S. Burbank (Jap.) has set well when pollinated with Reine Claude (European). Golden Drop and Jefferson are cross incompatible.

Cherries.

The important sour Cherries, English Morello, Montmorency, Early Richmond are self-fruitful, but may benefit slightly from interplanting.

All sweet Cherries, Black Tartarian, Early Purple, etc., are self-unfruitful and require interplanting—Bing, Lanbert and Napoleon are also inter-sterile and will not pollinate each other.

Stone Fruits.

With few exceptions, Peach and Apricot varieties are self-fruitful, and satisfactory crops are obtained without interplanting. In U.S.A., there are two notable exceptions—J. H. Hales and June Elberta Peach, which set no fruit without cross fertilisation. These two varieties are pollen sterile, and are useless as pollinisers for other varieties, as well as being themselves self-fruitless.

All varieties of Apricots are sufficiently self-fruitful to set good crops.

PROVISION OF POLLENISERS.

Since the highest yields are obtained from trees adjoining a good pollinating variety, and since a decrease in yield occurs in rows two trees distant, it is advisable to have no tree more than two trees distant from the desired polleniser. Two solid rows and then either one or two rows of the pollinating variety is satisfactory. If mixed planting is not objectionable, every third tree in every third row would provide a nearby polleniser.

Where there is insufficient provision for interpollination in an established orchard, pollinators may be grafted on limbs of trees at suitable intervals throughout the orchard. Grafts should be inserted fairly high upon limbs of old trees, as if inserted too low a large cut surface is exposed, which may not heal well. If the grafts are pruned lightly each year, plentiful blossom should be available in three or four years. In the meantime blossoming branches of suitable pollinating varieties, immersed in vessels of water, may be distributed throughout the orchard.

Summary.

The most important points in this paper may be summarised as follows:—

1. In planting orchards of Apples, Pears, Plums, Cherries, Almonds, etc., choose two or more varieties that flower about the same time, avoiding, however, varieties which are not compatible.

2. Where trees of one variety are in a solid block, and not fully productive, interplant or graft another variety in order to provide interpollination facilities.

3. If there is evidence of scarcity of bees to act as pollen carriers from tree to tree, make arrangements for distribution of hives in the orchard during the blossoming period.

APPLE PRODUCTION IN SWITZERLAND.

The number of Apple trees in Switzerland, according to a recent census, is estimated at about 5 millions. Apples comprise over 40 per cent. of the total fruit production of Switzerland, which averages about 300,000 tons annually. Nearly 50 per cent. of the total Apple production consists of cider fruit, which is mainly taken by the home cider industry, although substantial quantities are exported, chiefly to Germany.—Report by Empire Marketing Board.

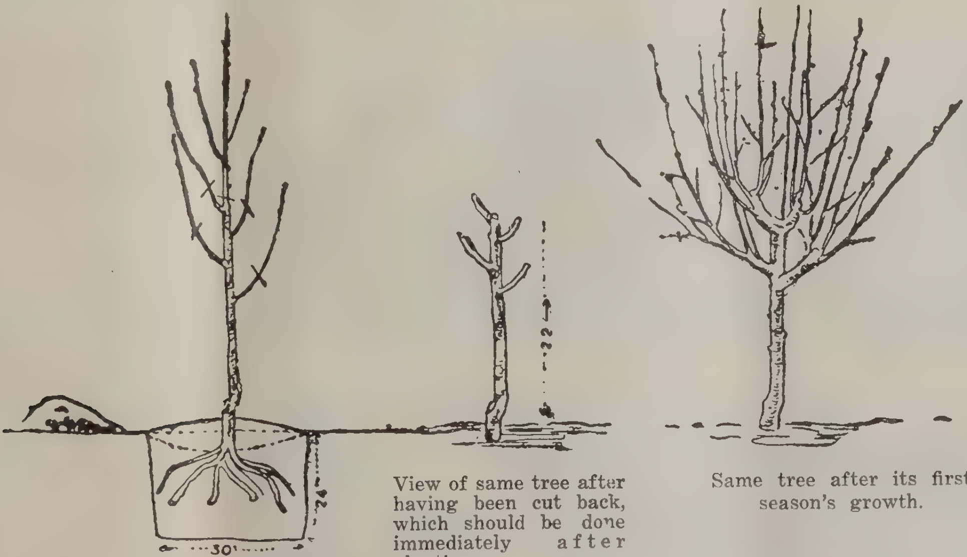
Fruit Trees on Fences.

The fan-shape is one that the amateur could follow with most fruit, i.e., the branches radiating from about one foot from the ground in the shape of a fan, the leaders of the young plant should be shortened back when planting, and when these begin to grow the leading shoot should be trained to the point it is intended to occupy, and others selected to form the framework, taking care not to overcrowd these; several shoots will form along the length of the branches, and these will need shortening back two or three times during the growing season to within three or four leaves of the base. These will eventually form spurs, which are a cluster of little shoots on which the fruit will form.

This process of cutting these shoots back is practiced each season. When the trees are at the size to cover the fence the leading shoots are kept cut back similar to the other side shoots. The aim is to have the branches clothed from top to bottom with fruit spurs.

In winter pruning it is only necessary to shorten back these spurs; the cutting back during the growing season, which is referred to as summer pruning, is the main pruning, and the energy used in making a lot of wood such as in the orchard, is diverted into forming the fruit spurs, and incidentally, the formation of fruit. It can be seen that finer fruit will be the result.

Observation and intelligence soon point out the way to the amateur and the different classes of fruit require different treatment, but based generally on the methods set out above. So it can be seen the first thing to do is to train the young trees into the desired shape, not overcrowding the shoots, but building up the fruit spurs as evenly spaced on the branches as possible, endeavoring to clothe the branches from top to bottom, or to put it correctly from bottom to top.



Section of Ground after planting.

The dotted line above the roots represents the basin to be left after planting, and which is to be filled with water, which, when the water has soaked away, is filled with the remaining ground shown on the left; if the planting is followed by a good rain it will be unnecessary to apply water.

View of same tree after having been cut back, which should be done immediately after planting.

Same tree after its first season's growth.

PLAN

Showing size of Hole, Method of Trimming the Roots, Planting, Watering and Pruning all Yearling Fruit Trees.—The same applies to the planting of two-year-old trees, excepting that the pruning is not quite so close.

—(Illustrations by courtesy C. J. Goodman, Picnic Point Nurseries, Bairnsdale, Vic.)

INTERSTATE FRESH FRUIT TRADE.

Sea Transport by Modern Fast Steamers and Motor Vessels.

MODERN METHODS of successfully dealing with the transport of fresh fruit for short journeys by steamer, in compartments other than refrigerator chambers, is constantly engaging the attention of experts in various parts of the world.

America in this regard is well to the fore with its modern method of handling fresh fruit for sea-borne transport, owing to the volume of their coastwise fresh fruit traffic giving them all the opportunities, of which every advantage is taken.

After all, apart from the variation in packing methods, the basis of the successful sea transport is the employment of fast vessels provided with suitable accommodation for satisfactory stowage. In this regard it will interest readers, particularly orchardists and fruit merchants generally in the Australian States, to know that a fast steamer service catering for the fresh fruit trade is now operating between capital cities of the Commonwealth.

Early last year the Associated Steamship Owners inaugurated a weekly service with several fast passenger vessels, which by special arrangement received fresh fruit for shipment at Melbourne up to **noon on Saturdays**, and delivered in Sydney at **6 a.m. the following Monday**, thus reaching Sydney in ample time for the early morning market.

The Queensland passenger vessels also received fresh fruit up to **noon on Saturdays**, and delivered in Brisbane at **8 a.m. the following Thursday**.

A decided advantage will be observed, in that the shipper is not compelled to send his fruit to the ship until the Saturday morning, but of course if required, the fruit will be received on the wharf the day prior to sailing.

This service has been favorably commented on, and readily availed of by orchardists, particularly those in the Doncaster, Mitcham Pakenham and surrounding districts, and fruit merchants generally.

The same fast service is still operating, and taking the present weekly shipments as an indication, it is giving satisfaction. The old idea that fresh fruit would not carry satisfactorily, even on short journeys, unless stowed in refrigerator chambers, is to-day a thing of the past, as the modern interstate passenger vessels, providing as they do ideal stowage in spacious cool 'tween decks, deliver the fruit in excellent condition.

An all-important matter to orchardists is the question of transport costs, and this has been given careful consideration. In conjunction with the fast service the Associated Steamship Owners have fixed attractive rates of freight. As an example—it only costs 7½d. per bushel case from Melbourne to Sydney. Government wharf charges, etc., and cartage at Sydney amount to about 4½d. per case, thus making it possible for the fruit to be delivered right into the Sydney market at approximately 1/- per case.

The rate per case delivered on to Brisbane wharf works out at approximately 1/0½ per case.

The foregoing rates, of course, provide for the fruit being shipped as "ordinary" cargo—the rates for shipment in refrigerator chambers being a little higher. A special feature of this service is the careful handling that the fruit is subjected to both at loading and discharging ports. Strict supervision in this regard is always maintained.

The special service chiefly benefits the growers in the eastern districts of Victoria, owing to the numerous cool stores that are available. This advantage enables the orchardist to pick his fruit at any time, and keep it in cool storage until interstate markets are favorable. Growers in the Goulburn Valley have not the same ready facilities, as cool storage has not been developed to the same extent as in Southern Victoria.

AUSTRALIAN FRUIT IN CHINA.

Good Sales by Chinese Merchant.

Mr. Wing Young, the well-known Chinese merchant, recently returned from China, where he has been on business for nearly two years. He established branches at Hong Kong and Kongmoon (Canton), and made business connections that will ensure a larger distribution of Australian fresh fruits.

While he was in China, Mr. Wing Young found that the American fruits were of good quality and brought good prices, but were not on the market when Australian fruit was available. He cabled his firm to send fruit and vegetables, and, having a clear market, sold everything at prices that gave good returns after exchange was added. Granny Smith and Jonathans realised 17/- per case, and Ohanez Grapes 18/- per case, including exchange. Plums that were wrapped also brought good prices. Fruits most in demand were Apples, Pears and Grapes.

Mr. Wing Young is Australian-born, and has had many trips to China. Each visit has strengthened his opinion that Australia was neglecting an excellent market, not only for fruits, but for other commodities, such as flour, leather, etc. His firm has not neglected opportunities, and besides sending shipments of fruit, they have obtained a fair share of the flour trade. They pack flour in attractive bags of 49 pounds, a size that is in big demand in the East.

What is wanted, he says, is a little more interest on the part of the Government in extending our markets in the East. Representatives from Australia should be stationed at Hong Kong, Canton, and Shanghai to get the trade that is available for the seeking.

If growers care to send trial shipments to the firm at Hong Kong, Mr. Wing Young says, he can assure them excellent returns if the fruit is of good quality and well packed.

A very attractive label is used by the firm. It is rich in color and depicts a Chinese Boy Scout gripping the hand of a youthful Australian. Both are standing on a globe on which the maps of Australia and China are prominent. On each side of the globe are the Chinese and Australian flags. The name, Good Pal Brand, is printed in English and Chinese, and on each label is the shipper's name with a life-size representation of the fruit each case contains.

There is little doubt that this attractive label has a big influence on the sale of the fruit.

As Usual.

"The time will come," shouted the speaker, "when the women will get men's wages."

"Yes," said a little man in the corner. "Next Friday night."

Graceburn Valley Orchard.

Successful Enterprise at Healesville, Vic.

Cultural Methods Described.

PLEASANTLY SITUATED on the hillsides just outside Healesville, the Graceburn Valley Orchard presents a picture of beauty, with which utility is admirably blended.

While an orchard is essentially a commercial enterprise, it is of no disadvantage that the surroundings should be charming. From an eminence one gets a good picture of this orchard, with its uniform rows of trees, and with the cool store conveniently placed in the centre.

This orchard was once the property of the late Westmore G. Stephens. It was purchased from the trustees of the estate by the present owners—a partnership consisting of Messrs. Albert E. Hocking, F. W. Vear and W. Muir.

The average rainfall is 40 inches, with heavy rains in spring and autumn.

The orchard is situated on a southerly slope and in a fertile river valley. The soil is a deep rich loam, ideal for growing big sturdy fruit trees capable of carrying from five to twenty bushels of Apples in a heavy season. The average age of the trees is about 25 years. The orchard is comprised of 100 acres, about 70 acres of which is in full bearing. Over 60 acres of these are Apples, and 7 acres Pears.

The varieties grown are Yates (24 acres), Jonathan (13 acres), London Pippin (7 acres), Sturmer Pippin (7 acres), Granny Smith (4 acres), and 3 acres of mixed varieties. The chief varieties of Pears grown are Packham's Triumph, Josephine des Malines and Broome Park.

Granny Smith, Yates and Sturmers are considered the most suitable Apple varieties for the district. The orchard is well sheltered, heavily timbered country on practically all sides, preventing loss from windfalls to any extent.

Cross Pollinisation.—At the time the orchard was planted the necessity for cross pollinisation was not realised, and the varieties were planted in blocks. One block of Yates contained 14 acres. To correct this, every fifth tree in every third row has, during the last five years, been top grafted with Granny Smith, and two branches of the same variety budded into each tree. The Granny Smith has proved itself to be an excellent polleniser for the Yates. Jonathan and London Pippins, which were likewise planted in blocks, have also had two branches of another variety budded in—Stewart's Seedling for the former, and Rome Beauty for the latter, have given the best results.

Results show that wherever the trees are inter-planted, the crops are heaviest in the seasons when Apples are scarcest. Where Apples are plentiful, and the crops are generally heavy, however, the result of cross pollination is not as evident, for the trees bear a uniform crop whether there is a tree or branch of another variety near by or not.

At Graceburn Valley Orchard, Healesville.

Top, left: A row of Yates Apple trees, being inspected by Mr. A. E. Hocking.

Top, right: The elevated spray stands. Spray pumps are filled here from overhead.

Bottom, left: A section of the 20,000-case cool store.

Bottom, right: Yates Apple trees bearing heavy crop. Mount Riddell in background.

The trees are completely free from woolly aphis. Five years ago the parasite Aphelinus mali was liberated, and has since succeeded in completely ridding the orchard of this pest.

Spraying.—Weather conditions in the district in spring and early summer are sometimes favorable to the development of black spot.

The following sprays are applied to control this fungus:—

One spray of Bordeaux mixture 6-4-40 strength when the tips of the buds are showing green, one spray of Bordeaux 4-4-40 strength when the flowers have separated and the tips are pink, and later three sprays of lime sulphur are applied. The lime sulphur sprays are combined with the first three arsenical sprays, the mixture being one and a half gallons of lime sulphur, 6 lb. of arsenate of lead paste, and 100 gallons of water. Care is taken to ensure that the solution is kept agitated once the lime sulphur has been added to the arsenate of lead and water.

Codlin moth is controlled by means of bandages on the trunks of the trees and by spraying arsenate of lead. The first spray of arsenate is applied as soon as the flower petals have fallen, so that a good deposit of arsenate in the calyx before it closes is assured. This spray is followed by five or six of the same kind. One spraying every three weeks.

All spraying is done with pistols at a pressure from 250 to 300 lbs. per square inch.

The varieties open in regular order. Jonathan first, followed by London Pippin, Sturmer, Granny Smith, and Yates.

Bandaging the trees with strips cut from old woolpacks has proved to be a very effective method of controlling codlin moth in conjunction with spraying. These bandages are inspected fortnightly from the second week in December until the end of March. All the codlin moth larvae found in the bandages are killed, and the bandages replaced. The loss of fruit through the ravages of codlin has been reduced to a minimum by these methods.

Manuring.—The manures are applied in the autumn and the spring, and sometimes in the irrigation water. Blood and bone is used in the autumn at the rate of from five to eight pounds per tree.

A good percentage of this is available to the trees by the following spring and summer.

Superphosphate is the manure used in the spring. Three to five pounds per tree is allowed. These two manures fulfil the requirements of the trees.

Potash is present in the soil in fair quantities. An application is made of sulphate or muriate of potash every three or four years. Sulphate of ammonia and nitrate of soda is used in the irrigation water to help Yates along in a poor growing season. One to two pounds per tree is the quantity used.

Cultivation.—A tractor and horses are used to draw ploughs and cultivators. The soil is ploughed on to the tree in the autumn, leaving a furrow in the centre of the land for surface drainage, and allowed to sweeten up during the winter months. During this time a thick mat of grasses springs up, and in the spring when they have attained the height of a foot or more are ploughed under and supply humus to soil so necessary where stable manure is not available and cover crops are not grown. The soil is ploughed off from the trees in the spring, and from then on the cultivators and harrows are continually at work and fine tilth three inches deep is maintained right throughout the summer months. The tractor is also used to operate a powerful water pump for irrigation purposes.

Pruning.—The trees are thoroughly pruned every year. Varieties such as Sturmers, London Pippins, and Granny Smith are pruned so that the fruit is borne on clean, healthy fruit spurs standing out from the main leader from four to eight inches. With the fruit hanging away from the leader it is a simple matter to deposit a film of spray over the entire surface of the Apple. The fruit spurs on the Yates variety are thinned out very heavily, one or two blossom buds only being allowed to remain on each spur. Even with this hard pruning, 75 per cent. of the Apples have to be removed at thinning time. Five to eight Apples are left per foot of leader.

Jonathans are pruned on the orthodox method of buildup healthy two-year-old fruit bearing laterals. The results given by this method are satisfactory.

Summary.—190,000 gallons of spray solution are applied to the trees in a normal season.

About fifteen acres of grass paddocks are contained in the property.

1. The orchard contains over 7,000 fruit trees.
2. Four acres are to be planted this year.
3. The largest crop was 35,000 bushel cases harvested in 1928.
4. The average crop for the last four years is 17,000 bushels.
5. Twenty-two bushel cases have been harvested from one Yates tree 23 years old. Forty-five bushels from a London Pippin 35 years old.
6. The total length of the agricultural drains in the orchard is estimated at 22 miles. These open into a system of open drains which carry the water to the river. The necessity for underground drains is obvious in the rainy months of the year.

Cool Store.

The cool store is a substantial, well-constructed building, with five chambers, having a total capacity for 20,000 cases. Power is derived from a suction gas plant. The direct expansion (coil) system has been adopted; previously the air circulation system was in operation, but the change over to direct expansion was effected, and has proved a decided improvement. In the well-equipped packing shed a large "Lightning" grader has been installed.

* * * * *

Altogether, the Graceburn Valley Orchard is a well-conducted enterprise. The principals are men highly esteemed throughout the industry and the business community generally. The managing partner, Mr. A. E. Hocking, is President of the Victorian Cool Stores' Association, and holds other public positions.

Our recent visit of inspection to the Graceburn Valley Orchard was much enjoyed.

Drouin.—Mr. Donald Grant presided over a large attendance of district growers on May 5. The meeting was held under the auspices of the Victorian Fruit Marketing Association. Mr. F. M. Read, M.Ag.Sc., delivered an address on the biennial cropping of fruit trees, and was cordially thanked. Mr. R. E. Boardman outlined the activities of the V.F.M.A., and the information given was appreciated.

It was decided to hold a further district meeting at the end of winter, when the subject of manuring could be dealt with.

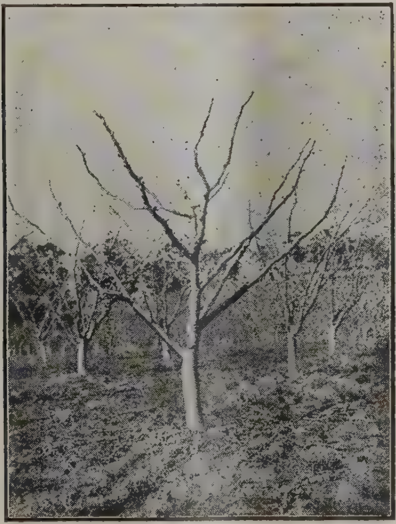
Converting the Unprofitable Fruit Tree.

(By P. H. Thomas, Chief Horticulturist, Tasmania.)

ONE OF THE MOST IMPORTANT problems confronting the fruitgrower to-day is the elimination of the unsuitable or unprofitable variety from the orchard. During the last decade the average returns received for certain kinds of Apples and Pears on the overseas or State markets have shown that they cannot reasonably be regarded as having any commercial future. Very often such varieties are being "carried" by other more popular kinds, and the grower would have been better off had the fruit not been harvested.

Recently, in making an analysis of the costs and prices, a prominent fruitgrower summed up the position very succinctly by remarking that—

"Out of his nine varieties of Apples—



—P. H. Thomas, Photo.

Fig. 1.—Ribston Apple Stripped of Laterals and Fruit Spurs, June, 1927.

Five could be considered profitable;

Two were distinct liabilities; and

Two might have been useful in providing the shipowner his freight, the agent his commissions, the merchant payment for manures and sprays—but he himself had not yet participated."

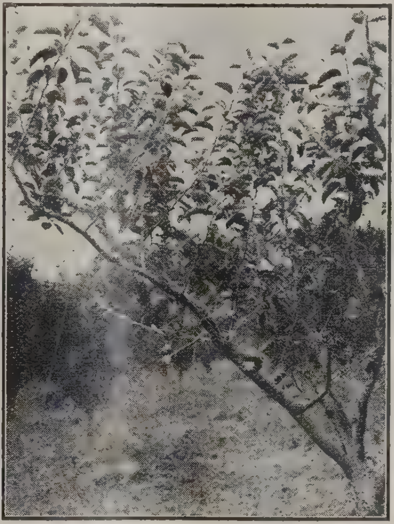
Whilst many fruitgrowers may be in a similar position, it is generally recognised that improvement can only be effected by treatments which involve certain disabilities and risks, the problem generally resolving into the choice of either converting the trees to the more favored kinds by reworking, or grubbing out and replanting.

Fruitgrowers are generally loth to adopt the latter course, especially when the costs of bringing an area of trees into maturity are considered, together with the difficulties of establishing new trees in the place of others in a bearing orchard.

"Reworking" by grafting has generally been practised throughout Tasmanian districts, but during recent years the prevalence of the fungus Polystictus versicolor (dieback) amongst trees so treated, and the serious losses and injury caused thereby, have somewhat deterred growers from converting their trees by this method.

Polystictus versicolor generally attacks trees at the open wounds caused in the grafting process. Investigation has shown that this is more prevalent when they are cut hard back into the main limbs, the large open wounds offering ideal conditions for the fungus. Reworking high into the main limbs—using the smaller branches, which will heal over quickly—is a method that is recommended to reduce the risks of infection. This has been successfully adopted in many instances, but growers generally prefer a low-headed tree having the maximum bearing capacity from the "crotch" upward.

Apart from the disease question, cropping is also of vital importance, and any method that may be adopted which will allow the tree to be quickly converted to another variety without seriously limiting the production for any lengthy period is obviously of great value.



—P. H. Thomas, Photo.

Fig. II.—Section of Tree Shown in Fig. I. "Thinned" Budded over to Jonathan, February, 1928.

After a careful study extending over a number of years of all factors, a method of conversion can now be recommended which is applicable to the majority of bearing trees, and will, if carefully carried out, eliminate the difficulties enumerated.

"Refurnishing"—the name that has been adopted for this method—aptly describes the process.

The initial work is carried out in the winter, the trees which are to be treated being deheaded as in Figure I. and thoroughly stripped of all laterals, fruit spurs, etc., retaining only the skeleton framework for the operation.

Any large wounds caused by this operation should be coated with a fungicidal paint, such as white zinc and linseed oil, or with coal-tar. The latter is especially recommended in the cases where varieties are subject to woolly aphis (Eriosoma lanigerum), as it prevents the cuts from becoming infested with this pest.

During the following spring the trees will force a large number of new growths throughout the length of the main limbs. These are thinned out when they are soft and immature, retaining a well-placed growth at the terminal for the leader, and spacing those on the main limbs about 8 inches apart.

Budding may be commenced early in February, or as soon as the new growths are sufficiently mature to allow the buds to be inserted,* the object being to place these as near to the main limbs as possible (Fig. III.), and choosing the best positions for converting the resultant growths of the new variety into sub-branches, laterals, or fruit-spurs.

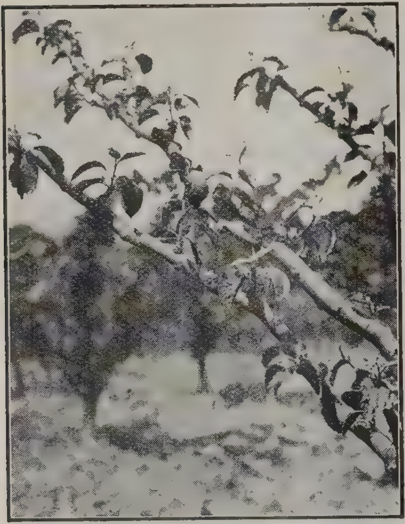


Fig. III.—The Same Tree Section as in Fig. II., Showing the Ribston Growths "Headed Back" and Jonathan Buds Commencing Growth, November, 1929.

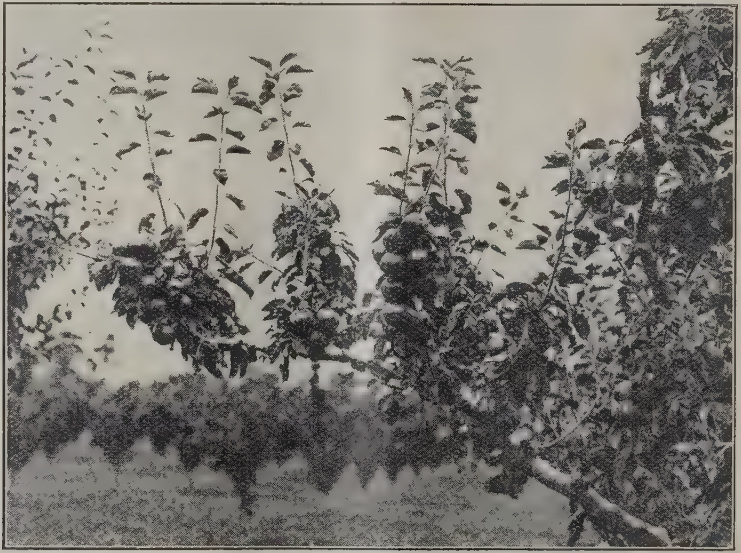


Fig. IV.—The Same Tree Section as in Fig. III., Bearing Fruit of the New Variety. February, 1930.

The buds will remain dormant throughout the autumn months, and should be headed back early in the spring, just before growth commences.

If "misses" are experienced, it is advisable to leave the particular growths unheaded, and work these over, using the tongue method of grafting.*

When the buds of the new variety commence to grow, all other shoots should be suppressed, but after they have reached the length of about 14 inches they should be lightly tipped. This has the effect of maturing their wood, making it more sturdy and wind resistant.

If the operations explained have been carefully attended to, at the next winter's pruning the grower should be in possession of trees completely "refurnished" with the new variety.

The subsequent pruning can be carried out according to variety and the ideas of the operator, but it is advisable to encourage a lateral bearing system where possible.

Occasionally it may be found necessary to remove growths of the old variety. After the buds have become established this tendency will disappear, but if any surplus growths are experienced they can be removed at the winter pruning.

The "refurnishing" method may be adopted for converting most deciduous fruits, and is especially suited to those which do not respond to graftage. Whilst necessitating a certain amount of extra time and attention, if carried out carefully, the ultimate results will be satisfactory to the grower, not only in the earlier cropping, but also in the elimination of disease risks, which are always present under the old methods.

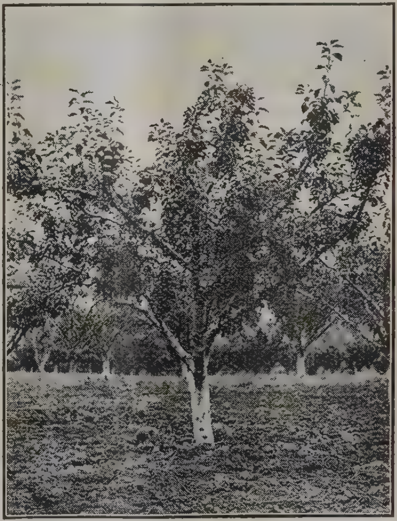


Fig. V.—Ribston Pippin Apple Tree Shown in Fig. I. converted to Jonathan. This is one of a number of trees treated by this method which bore up to 2 bushels of fruit two years after the buds were inserted.

Illustrations and article by courtesy of Tasmanian "Journal of Agriculture."

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*The process of budding is fully explained and illustrated in Department of Agriculture Bulletin No. 3 (New Series), "Reworking of Fruit Trees," pages 9-12.

The Banana in Western Australia.

(By F. J. S. Wise, Tropical Adviser, W.A. Department of Agriculture.)

BANANA CULTIVATION in Western Australia is projected on a commercial scale.

The following article and illustrations (re-published by courtesy of the Western Australian "Journal of Agriculture," set out particulars of the progress so far made and the possibilities of the industry. The article proceeds thus:—

Consumption.

The American consumption is 25 pounds per head per year. The Australian consumption is under 10 pounds per head per year, and in the Eastern States, where the market is well supplied, this could probably be doubled, while in this State our people are mostly starving for Bananas, and if we could but produce them we have our whole population to serve.

Value of the Industry.

Western Australia is now growing Bananas.

An eight months planted area at Carnarvon, W.A.

—(Illustration by courtesy "W.A. Journal of Agriculture.")

The world trade in the Banana is enormous. The United Fruit Co. of America ranks as one of the first ten industrial companies in the United States of America. Its assets are over £40,000,000, and include a fleet of 80 steamers. It owes its prosperity entirely to the Banana. In England Elders & Fyffes dominate the Banana trade. This firm has ripening rooms capable of ripening 16,000 to 17,000 bunches at a time. The exports of the principal Banana-producing countries for 1929 were as follow:—

	bunches.	
Jamaica . . .	18,250,000	(mostly "Gros Michel" variety)
Honduras . .	14,500,000	,, ,, ,,
Columbia . .	10,870,000	,, ,, ,,
Costa Rica . .	7,660,000	,, ,, ,,
Guatemala . .	6,000,000	,, ,, ,,
Mexico . . .	4,150,000	,, ,, ,,
Canary Is. . .	7,500,000	,, (Cavendish variety)
Panama . . .	4,000,000	,, (mixed varieties
Cuba	3,000,000	,, ,, ,,

The principal markets are the United States, Great Britain and Canada. The United States of America and Canada combined take 53,000,000 bunches per annum and Great Britain and the Continent import 25,000,000 bunches per annum.

In our own country its commercial production has been limited to two of the Eastern States—Queensland and New South Wales—where the industry is worth nearly two millions sterling. It is probable that no better Bananas are produced in the world than in Queensland, where there are 5,000 growers engaged in the industry, and whose sales in Australasia amount to £1,250,000 per annum. Regular fruit trains, carrying from 3,000 to 6,000 cases weekly, travel from the Brisbane districts and North thereof conveying the fruit to Sydney, Melbourne, and Adelaide. With such a regular supply these cities have placed the Banana high on the list of foods. Our capital is, however, very unfortunately situated with regard to necessary supplies from Queensland. Several attempts have been made to establish a trade connection for Queensland Bananas, but with no great success. This is not surprising, as their transport from Queensland to Perth involves six handlings by train and at least two by boat. It has to be borne in mind that quick transport, and good ventilation, are very necessary to ensure that the fruit shall arrive at its destination in good condition, for it is neither possible to freeze or chill the mature or immature Banana. On the other hand, however, if we can produce our own requirements in the North, as is believed possible, Perth is fortunately situated, for it is as far away from the Eastern States' plantations as from Java, and there is a direct shipping service between the North-West ports and Fremantle.

Ideal Conditions.

Ideal conditions for the production of the Banana would be a deep well-drained rich alluvial loam, or well-drained soil of volcanic origin rich in humus, in a well-sheltered position, free from frost, near the coast, and with a well distributed rainfall of 50 inches upwards. The most successful Banana producing countries in the world in point of acre yields include Honduras, Columbia, and Queensland, and the average rainfall in the Banana districts in these lands is between 60 and 90 inches. On the West coast of Guatemala, which has large acreages, the annual average is over 150 inches. We are unfortunate in this State in not having ideal natural conditions in any part of our long Western coastline, but in spite of this we should not lose hope of establishing the industry on a sound basis. It is really a remarkable coincidence that one of the driest and most windy parts of our coast, viz., the Carnarvon district, should offer the best chance of commercial success, mainly on account of the deep friable fertile loam of the river frontages, the plentiful supply of water for irrigation at shallow depths in the river bed, and the proximity to the metropolis—48 hours' direct steam.

An eight months planted area at Canarvon.

Almost a parallel with us in the important Banana producing countries is the Canary Islands, where Bananas are grown under irrigation, largely on terraces on the hillsides, and most of these terraces have been built up. The production is high, averaging about 1,000 bunches per acre. The only variety grown there is the one the Department has advocated for Carnarvon, viz., the "Cavendish."

Soils of the Far North.

The peaty soils found in or near all the pandanus spring areas of the North-West, and of which Beagle Bay and Udialla (Fitzroy) are typical examples, should grow the "Gros Michel" variety successfully in addition to the "Cavendish." It is unfortunate that several good areas are growing thickets of "Plantains" instead of heavy producing and more marketable sorts. In the station gardens also I would strongly recommend the discontinuance of plantains.

Varieties.

Among the varieties grown commercially in Australia the "Cavendish" easily takes precedence. It is the most dwarfish in growth and, therefore, less liable to damage by winds. Under very favorable conditions it will grow to 14 feet in height, usually about 9 to 12 feet, and each stalk or plant in the stool is capable of carrying 30 dozen fruit.

The "Sugar" Banana was at one time largely grown in Southern Queensland, but is now seldom seen on account of its susceptibility to the Panama disease. The growth is tall and, therefore, very subject to wind injury.

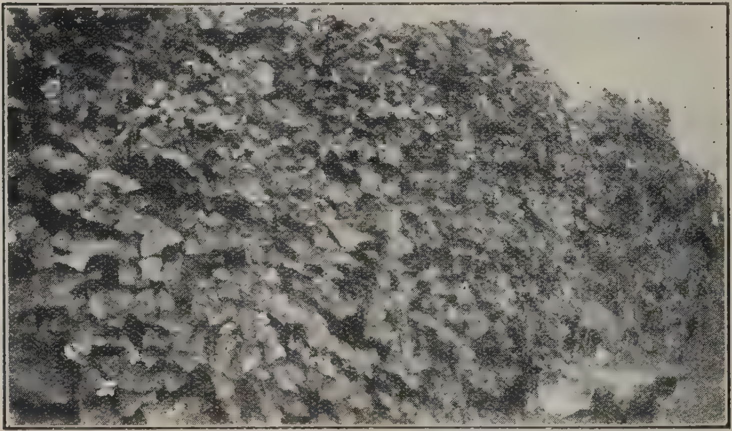
The "Lady's Finger" is also a tall grower, probably less susceptible to frost than the other varieties, but the fruit has not a great demand.

The "Gros Michel" is a tall grower, and is very partial to heat and heavy rains. The fruit is large and carries well, though it has not the flavor of the "Cavendish."

The many varieties which have from time to time been introduced from Java and Singapore to parts of the North-West are entirely unsuited for the conditions which obtain there; not only do they suffer from the severe winds, but it must be borne in mind that their success in their native lands is due to the excessive heat and copious rainfall the whole year through, which is accompanied by high humidity and not dry heat and drying winds, such as are typical of some portions of our North.

Necessity for Breakwinds.

Viewing Carnarvon as the most likely district for the successful commercial production of the fruit under irrigation, the necessity for effective breakwinds must be stressed. On the northern bank of the Gascoyne River there is some protection afforded by the river gums, and in some of the hollows right close to the river these may be sufficient. For the most part, however, it must be accepted that breakwinds must be provided to counteract the deadly effect of the winds. During the brief space in which endeavors have been made to grow the Banana in Carnarvon several kinds of breakwinds have been tried, including high galvanised iron fences, but it is doubtful whether a cheaper or more effective breakwind could be obtained than systems of high trellises of seven-year Beans, which quickly provide a dense growth to any required height. They can be made to reach any desired height, and there is no doubt of their efficacy and **no doubt of their necessity** at regular intervals thorughout the intended plantation. Without adequate protection for the leaves, which are the food-manufacturing laboratories of the plant, good results cannot be expected. The accompanying photographs clearly indicate the utility of the seven-year Bean for this purpose.



The seven-year bean forms a dense mass of protective growth. This wall of green growing breakwind would be hard to excel, and can be trained to any height and planted at suitable intervals without any detriment to the other growing crops.

Preparation of the Land.

Although the plant is not for its size and bulk a deep rooter—the lowest roots seldom going deeper than three feet—deep and thorough preparation is very essential. In the East a plough is almost unknown in a Banana plantation, as the fruit is mostly grown on the steep hillsides, some of which are so steep that the bunches are sent down to the lower levels and sheds on wires and pulleys. This land is naturally well drained, is often very stony, and in its virgin state is covered with dense jungle costing to £5 per acre for felling alone.

Under our conditions, however, we must by thorough and deep preparation assist to promote fertility, secure perfect drainage and render the land fit for the severe demands of the healthy Banana plant.

Grading and Drainage.

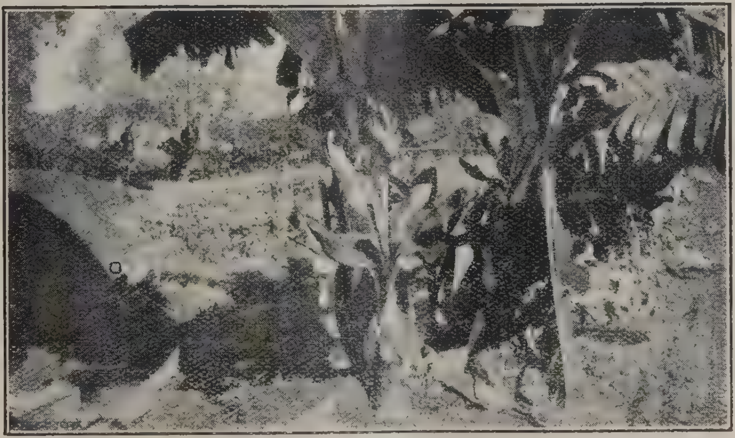
For the purpose of economical and even distribution of water, careful grading is necessary. When grading, the natural contour must be studied and utilised as far as possible.

Liming.

After grading, the application of 1 to 1½ tons per acre of lime will be advisable where the soils are acid, broadcasted and lightly harrowed in. Lime is an esesntial constituent for the Banana; it will correct soil acidity, in all probability retard nematodes, and is best applied some weeks before planting. On no account use artificial fertilisers for some weeks after the application of lime.

Should planting be delayed after the ground is ready for the suckers, or if time permits, a crop of cowpeas (a fertilised crop to secure a heavy growth) could be grown to advantage and ploughed in when the pods are just setting. This will afford the best opportunity to apply humus and will assist in the retention of moisture. All forms of organic matter are essential to vigorous Banana growth, and every effort should be made to preserve and add to the existing humus content of the soil.

The effectiveness of the seven-year Bean as a breakwind is clearly shown in the unbroken leaves.



A very desirable type of sucker to plant is illustrated in this photograph. Note the taper of the leaves and of the sucker itself terminating at the base with a large butt.

Spacing.

The land being graded, with the object of effective watering, should be laid out in suitable rows from 12 to 16 feet apart, the plants to be 10 to 12 feet apart in the row. For thorough cultivation and watering, this spacing should be regulated to suit local conditions. Crowding of suckers and plants will reduce the size of the fruit, and will most likely shorten the profitable life of the plant. On the other hand, experience with plants under irrigation has not been long enough to set down hard and fast rules. A trial of different spacings on a given area is suggested to the intending grower.

Suckers.

Propagation is made by means of suckers. There are many kinds and types of suckers, and, as in the case of all plants, good propagation stock is an essential factor. Suckers with a large butt or corm, which usually appear above ground with pointed (commonly known as "sword") leaves are desirable. The small solid round sucker taken from the base of the parent forms a good plant. Split butts also make excellent plants; in fact, "bits," as they are called in America, are very popular as plants. If the butt is not split, it is a good idea to gouge out some of the eyes, leaving only those well spaced to grow. There is a distinct advantage with butts in that they will be two or more (according to the number of eyes left) first bunches of good quality at the first bearing. It is also found that the following suckers are more easily controlled. Broad-leafed water suckers, with slender stems, should at all times be avoided. Very forward suckers will yield a quick bunch, but best results will be obtained from well-developed tapering suckers (see illustration). Size is not so important as vigor, which is indicated in the length of the sucker, its taper and its large butt. To prepare the sucker for planting, trim off all roots as closely as possible, cutting the stem off well below the foliage. Try and use suckers in which the sword-leaf is not fully developed; next to them use "butts."

Planting.

Bananas under irrigation are being specially dealt with, and bearing this in mind it would be well to give the ground a good watering a week prior to planting. If the preparation has been thorough it will not then be necessary to water until the plants have started to grow. Local conditions also effect the depth to plant. In alluvial soils the plants may be put in deeper to advantage, but if the subsoil is heavy, on no account plant in deep holes. For Carnarvon conditions it is suggested that the plants be set out in holes dug out to 18 inches, the base of the sucker when planted not to be covered by more than 5 inches of soil, so that the plant is started slightly lower than the average level of the land. The filling-in of the hole is completed by cultivation and the gradual development of the plant.

A broad-leafed sucker, not a desirable type to plant. Usually with little vigor and throwing a small first bunch.

Time to Plant.

It may be found that early planting will be best at Carnarvon. Early planting, i.e., as soon as possible after there is any sign of spring, has the advantage of the plant having a good hold and being in a robust condition before the slackening off of the growing period at the approach of winter. Should there be any summer rains they will then materially assist the plants, especially if the weather is humid.

Period of Maturity.

Should large butts or forward suckers be planted it may occur that two or three first plants with several following suckers will grow before the first bunch is produced. Provided there are not too many, it is seldom necessary to remove any suckers prior to bunching; the general practice is to leave all suckers until the maiden plant has produced its first bunch. Should three large suckers on one stool come into bearing with their first bunch simultaneously, careful note of the ages and position of following suckers must be taken. **Three suckers and no more** should be allowed to follow the first cutting, which will provide larger bunches of better fruit than if more are allowed to grow. De-suckering should be effected as soon as possible after fruiting, and care should be exercised that not any more roots than necessary are cut and damaged. Use a specially made bent bar, or with care, an ordinary mattock will serve. Water suckers may be removed at any time by cutting the top off the offending sucker low down to the ground and gouging out the centre. This will kill the sucker and not disturb the plant.

Cultivation between rows will consist of keeping the ground clean and the surface loose. When chipping close to the plants do not chip too deeply, but at a distance from them a deeper chipping or cultivation is suggested, which will assist the plants to root more deeply, and, in consequence, withstand dry spells better, and may also be a means of combating the nematode.

Propping Bunches.

It is necessary to prop the first bunch to prevent the plant from falling over. The weight of the bunch with the first fruit set almost pulls the plant out of the ground, and it is advisable as soon as the bunch is "set" to relieve the plant of the strain. Light props of split or round timber should be used, sufficiently long to form a solid support to the plant by placing high up immediately under the bunch, with the other end firmly in the ground. See the illustration showing how the prop should be placed. This is an important item, and by pressing the prop into the soft plant at the base of the bunch "handle" the plant is made quite rigid, and there is no danger of the bunch falling over, whereas if the prop is placed low down the plant will break off half-way up.

Removal of the Flower Ball.

This is a practice not universally adopted. If it is done it should not be broken off too early or the plant will bleed for days and the fruit will suffer much more than if the ball is left on. The bleeding may be stopped by placing some soil on the cut made.

Cutting the Bunch.

When the fruit has become rounded and filled it is approaching maturity, it will have lost its angles and will split from end to end if touched with the point of a sharp knife. Cut the bunch with as long a handle as possible for convenient handling, and do not bump or bruise the fruit. Every bump or bruise at this stage will appear in the ripened fruit. The absolutely correct stage to cut the bunch can only be determined by experience and observation. In the cooler months the fruit will hang much longer, and in any season the longer it can be left on to permit reaching the market in the proper condition the better. For some time at any rate the fruit grown at Carnarvon or anywhere in the North-West will find a local market and will, therefore, be marketed in the bunch. Later on, when there is a sufficiency to send to the city markets, the fruit will be packed in 1½ bushel cases. Systems of packing, etc., will be dealt with when this time comes.

Cutting Out the Matured Plant After Bearing.

On some plantations in the Eastern States the plant which has completed its life's work and borne fruit is left for a few weeks before removal. The reason for this is that the sucker following is less likely to be damaged, and very quickly forges ahead if the parent stem is left for a few weeks. There is a danger in this practice, however, and that is there is a possibility of it being neglected, and in dying back forming a harbor for borers and other pests. On this account it is best, after removing the bunch, to cut out at once the finished plant as close to the ground as possible. It will then heal over and not form a harbor for borers. As above mentioned, be careful not to injure the "following" sucker during this operation. It can be taken that the first bunch will be cut any time from 14 to 20 months, according to the condition and age of the planted sucker, and the first following sucker of the parent will bear the next year.

Bunch within a few weeks of maturity. Note the position of the supporting prop, high up to take the weight.

Life of the Plants.

With care and proper treatment it is possible that the life of the plantation under our conditions should be at least six years. Under ordinary circumstances, i.e., relying on natural conditions and rains, this would be a long life, and above the average of profitable life of most Banana-producing lands. The plants would probably live until killed by disease, but if kept well watered, tended and fed, should live for six years, but heavy fertilising will be necessary after the second and third bunch to maintain the fruit of size and quality.

Manuring.

Although Bananas may be grown in soils deficient in essential plant foods, they will not thrive unless the required constituents are made available. It is advisable that the humus content or the supply of organic matter should be high, and that it be kept up by green manuring, or other means.

A complete fertiliser for the Banana recommended by Brunnich, and extensively used in the Eastern States, may be made from the following:—

Dried blood—2 cwt.
Superphosphate—2 cwt.
Sulphate of potash—2 cwt.
or
Nitrate of soda or dried blood—2 cwt.
Bonedust—2 to 3 cwt.
Sulphate of potash—2 cwt.

Both of these mixtures can be applied at the rate of five to eight pounds per mature stool; higher or lower quantities according to age, etc., of plants. Apply the above mixtures in two dressings, one towards the end of summer and the other at the end of winter. A very light dressing of salt at the rate of 1 cwt. of common salt per acre will benefit plants in soils of very low salt content, or to be safe and to assist to make good this deficiency use muriate of potash instead of sulphate of potash.

As can be expected with plants yielding such heavy crops, there is a constant drain on the fertility of the soil, and, generally speaking, it can be confidently stated that the Banana cannot be overfed.

Green Manuring.

In the older countries of the world continuous cropping has gone on for centuries, and has been made possible by rotation of crops and a heavy supply of organic matter. Soils rich in iron, soils in hot climates, and soils cropped with such heavy feeders as Tomatoes, Bananas, etc., need heavy supplies of organic matter to retain their fertility. Soils of good humus content are able to retain moisture, and make good use of any chemical fertiliser applied. The growing of leguminous crops between the rows, especially if the land is fertilised for those crops, is a sure way to assist in this direction.

Diseases and Pests.

Although the Banana is prone to very many diseases of all kinds, including rusts, leaf spots, virus disease (bunchy top), Panama disease, etc., at present there are only two calling for lengthy comment at this stage of our development. They are Banana weevil borer and nematodes.

Banana Weevil Borer (Cosmopolites sordida).

This pest was found to be in the plantains in the Carnarvon district in 1923, when the first effort was being made to produce the Banana commercially in this State. This pest is scattered throughout Australia; it has cost the Banana industry of the world immense sums, and was introduced from the Pacific Islands and from the West Indies, very many years ago, prior to the passing of the Federal Quarantine Acts.

The beetle or fully matured insect is a true weevil about half an inch in length, with a very prominent trunk or proboscis; it has a hard shell, and like all weevils, feigns death when disturbed. The beetle usually lays its eggs at the base of the stem or on the corm, and when they hatch out the larvae eat their way into the corm, which they eventually tunnel through and destroy. The larvae are yellowish grubs about half an inch long with a brownish-colored head. The general symptoms of the presence of the pest are a general unthrifty appearance of the plant, the whole plant showing signs of deterioration, bunches are small, and in the very advanced stages the plants have such a poor hold of the ground that they fall or are easily pushed over. The insects are usually of a very sluggish nature, do not travel far from their feed, and are usually spread by means of infested suckers and plants. Flight also plays some part in the dispersal of the pest, but, unless the plantations are contiguous, there is little danger from this means of infestation.

We know that this pest is in the Carnarvon district, and, therefore, even if there are no symptoms of it in any plantation, a careful lookout is urged, and, if the beetles are found, no time or effort should be spared in an endeavor to exterminate them.

Control Measures.

As has been repeatedly pointed out by our Entomologist, there is little hope of employing sprays or fumigants against this pest, as in all stages of its life cycle, except the adult stage, it is securely protected behind a barrier of plant tissue; attention must, therefore, be confined to the beetle itself.

In practice it has been found that the beetles are attracted to baits, and further, that the beetles so attracted may be killed by poison. A simple method of trapping the mature insect has been practised for years. It has been found that the beetle is very partial to the flesh or the fully matured corm, and by taking the corm from the base of a stem having matured its bunch, cutting it in halves and placing the cut surfaces to the ground near the stool, the insects will be attracted and will be found adhering to the bait or immediately under it, and can be gathered and destroyed. By dusting the baits with Paris green the two operations may be combined. It is desired to impress and insist that it is a serious obligation on the part of all interested in the industry to keep a careful watch for this pest, and the policy to be adopted is to keep new areas clean by careful examination and trimming of suckers prior to planting, and, should infestation occur, destroy all corms showing the presence of borer tunnels and adopt the simple measures of control herein mentioned.

Nematode or Eel-Worm.

This is a serious pest in some areas in the State and is very destructive. The list of economic plants attacked is very large, and the presence of the pest in the root system is usually associated with disastrous results to the plants attacked. Although a large number of species of gall worms are included under the name of nematodes, the most serious is the one which affects Bananas, Tomatoes, Potatoes, Beet, Pineapples, Watermelons, etc. The disease is readily seen on examination of the roots, when irregular lumps will be seen which interfere with the functioning of the plant. The Banana is very susceptible. When the young nematode enters the root it begins to enlarge, and feeds on the root tissues, irritating them; they then swell and form the gall, and so serious does the trouble become that water and the plant foods cannot pass through the roots. It can be definitely stated that the cure of infested plants is quite outside the bounds of possibility, hence control should aim at destroying or reducing the number in infested soils, and keeping uninfested land clean. The spread of the pest is facilitated by ordinary farm operations; implements used in infested areas will transfer the pest, and they will be similarly transported in the soil adhering to the boots of men or to the hoofs of horses. They will also be carried in the water when irrigating.

Prior to planting Bananas in new land, after all the roots have been closely trimmed, the plants should be immersed in a solution of corrosive sublimate at a strength of 1oz. to six gallons of water, and, as dealt with earlier, the plants should be set in a depression in the soil. Even where infestation is present, plants may be kept on a profitable basis by constant and thorough cultivation and heavy manuring. The most economic way to control the pest is by a system of rotation in which crops which are immune to the attack of nematodes feature prominently. In this way they may be starved out of the soil. Nematodes have been known to live in soil for more than a year, even when no food plants are present, so that a systematic rotation is very necessary. Among the plants that are immune to attack, or are but slightly affected, are maize, sorghums, broom millet, barley, peanuts, some cowpeas, most grasses, and Velvet Beans. These common crops, which are known to be resistant to the attack of the pest, may be used in a well planned rotation with profit, and should permit of the subsequent growing of the Banana in a soil in which the pests have been reduced to a minimum.

Other Diseases.

There are many diseases of the fruit and leaves, as well as many pests, some of which are of trifling importance to the grower. There are, however, some chances that the industry will be handicapped by the incidence of pests, such as fruit-eating caterpillars and fruit spotting bugs, which will, when they appear, be dealt with by the Entomologist of the Department of Agriculture.

SOME SCHOOLBOY "HOWLERS."

The following questions and answers are taken from a recent examination paper.

Question: Give a short description of manual labor.

Answer: Manual Labor is a Mexican bandit.

Question: Give a short description of Rex Beach.

Answer: Rex Beach is a fashionable American watering place.

Question: Describe the result of the American Civil War.

Answer: There were a lot of dead soldiers on the ground.

Question: What is a Volcano?

Answer: A volcano is a burning mountain, and if you look down into it you can see the Creator smoking.

Direct Expansion or Air Circulation.

Relative Merits Discussed.

A Paper Read by Mr. R. Werner Before the Fruitgrowers' Cool Stores' Conference.

IN JUDGING the relative merits of both direct expansion and air circulation the grower undoubtedly looks at the result only, that is, the way the fruit turns out of the store. From his point of view, one system may have some advantage over the other in its ultimate result. The cool storage expert, however, analyses the position a good deal further, in order that he may get to the reasons for the possible advantage of any system, and he would divide the subject up into three main headings as follows:—

1. Temperature maintained.
2. Humidity of air in chamber.
3. Circulation of air in chamber.

The first—temperature—although the essential of "cool storage," is by far the most simple of the conditions governing the successful cool storage of fruit. Just what is the right temperature to a degree, seems of no great importance, as engineers in charge of stores maintain widely differing temperatures, all with a great measure of success. Also, there is quite a variation in temperature between the top and bottom layers of cases and those cases at inlet and outlet ducts of some stores to add further weight to this contention. Again, how many cool stores have thermometers of sufficient accuracy to guarantee that they are holding this or that temperature?

We know that

Apples are stored with Pears

at a lower degree than they would be held by themselves, with no harm. We know of cases near wall or ceiling coils, or directly under inlet air ducts that are also far too cold for recognised Apple temperatures, yet they come out satisfactorily.

All these references must serve to prove that as far as cool storage of fruit is concerned that temperature is probably the least important condition.

Importance of Humidity.

We now come to the second heading, that is "Humidity." Before dealing with this point it is necessary to make some explanation as to what is meant by "humidity," the control of which will in the future play a very large part in industry in general. Like temperature, humidity is a condition of the atmosphere, which can be definitely recorded by instruments and controlled by suitable appliances.

The human body is just as sensitive to different humidities as it is to temperatures. Common expression referring to this state of the air are almost daily on our lips. We say that it is very "close" or "muggy." Although it may not be hot, it is uncomfortable.

The fact is that in addition to possible stillness of the air the humidity is high or the air is so highly charged with moisture that it cannot readily absorb any more and the moisture given off by the human body is not evaporated quickly enough to keep the body cool, consequently we feel hot and uncomfortable. Or it may be a bright spring day of a higher temperature than the "muggy" day, yet we are quite comfortable. In this case the humidity is low and the air readily picks up the moisture constantly exuding from the pores of our bodies, and we move about in comfort.

Roughly speaking, the

atmosphere is like a sponge,

and can hold a little or a lot of moisture. Squeezing the sponge to force out some of its moisture is the same as cooling the atmosphere when some of its moisture is deposited on the cooling agent in the form of dew on the grass, or frost or sweat on the cooling coil.

Allow the sponge to again swell to its full shape and it can take up more moisture. Heat the air by the rays of the sun and it again picks up what remains of the dew that the earth or grass has not absorbed. Heat the air in the cool chamber and it will absorb the moisture off the coils once more.

Now, you ask, how can there be moisture in the air when the temperature is down to freezing point, where water becomes ice?

Well, there is always some moisture present in the air, even at very much lower temperatures than those met with in fruit storage. Now the next important point is the method of measuring "humidity." It is not like a degree of temperature, but is measured in percentage of how much moisture the air actually holds at a given time and temperature compared with what it can hold or when it is saturated. The hotter the air is, the greater weight of moisture it can hold. Saturated air at 40 deg. holds 3 grains of moisture per cubic foot, while if you heat it up to 80 deg. it can hold 8 grains more, or 11 grains per cubic foot before it is saturated.

Saturated air is said to be 100 per cent. relative humidity. Over 100 per cent. the moisture becomes visible in the form of a fog or fine particles of water floating in the air as clouds. When the air contains half as much as it can hold for a given temperature it is said to have a relative humidity of 50 per cent. Comfortable humidity at average temperature is about 65 per cent., that is to say, it contains only 65 per cent. of the total amount of moisture that it could hold at the degree of temperature.

This explanation may have seemed irrelevant to the subject of this paper, but it has such a vital bearing on the question that some little knowledge of humidity will not go amiss.

Now the method of measuring the

relative percentage of humidity

is by two thermometers, wet and dry bulb, one ordinary one and the other has its bulb encased in a fine silken bag fed with water from a reservoir by means of a wick. You all know that a wet bag in a draughty place keeps colder than the surrounding air, and likewise the wet bulb of the thermometer causes it to register a lower temperature than its dry mate.

Read both thermometers and refer to a proper table or chart and the percentage of relative humidity is obtained.

Now for full justification of this important aspect on the relative merits of direct expansion and dry air circulation, I have ascertained the various conditions existing in some stores.

The temperatures we are most concerned about are those between 30 and 35 degrees, and the air circulation chambers are showing as a rule a 5 to 10 per cent. lower relative humidity than the direct expansion rooms. The difference in dry and wet bulb thermometers at those temperatures should not be more than one degree Fah., as this will represent a humidity of about 90 per cent. A difference of more than one degree indicates a lower humidity and a difference of less than one degree, a higher relative humidity. From this experience it seems that the higher humidity is automatically obtainable in direct expansion chambers, whereas in air circulation chambers it has to be carefully watched.

These figures and their comparisons will probably help growers and others to understand the actual condition of the air which has that important influence on the way their fruit comes out of the chamber. In the comparatively small difference of relative humidity that does exist, there is not enough variation to feel or detect it without the aid of suitable wet and dry bulb thermometer and a chart; and every cool store owner or operator should make it his business to get more particularly acquainted with his highly important subject of humidity; the study of which will ultimately lead to better fruit storage and in turn to better prices.

Control of Humidity.

Some of you may have been wondering after so much has been said on this single point, how you can control this invisible condition? Control is being practised every day by cool store operators, although maybe they are unconscious of the results of their actions.

The dry air man concentrates his brine, time and time again.

Why does he do it? He knows that he must keep it strong enough to keep his coils clean, or up goes his running time as I will refer to later.

What does boil out of his brine? A good deal of moisture from the air and a good lot of moisture from the fruit. Some moisture is picked up from new air entering the chambers when doors are opened and when rooms are ventilated. Also, that moisture temporarily deposited on fruit during ventilation periods is greedily sucked up.

At any rate, boil his brine, he must, to keep going; but this is where the experienced cool storage engineer is absolutely necessary to safeguard his employers' fruit.

Strengthen the brine too much, and the high natural affinity of the brine for water, in addition to the lower temperature, a strong brine will carry, and quickly picks up moisture and lowers the per cent. of relative humidity to a point where the fruit gives up more moisture and shrinks—to the loss of its owner.

Maintain the brine at a proper degree of density to just clear the coils or even leave some ice on the bottom pipes, and the humidity is just within the line of producing satisfactory, if not good, results.

So you see that

humidity can be controlled

in air circulation rooms by the engineer watching closely to his brine density. It would hardly be practicable, however, to reach the higher humidity ranges maintained in direct expansion stores, as any moisture deliberately added by means of wetting fruit and cases, or spraying in of water in the chambers, wet bag system, or the like, would throw a heavy duty to the brine concentrating department—that is to say, what moisture you inject in excess of a certain limit would be quickly carried out of the room and deposited in the brine.

Now as for control of humidity in direct expansion rooms.

As the humidity happens to be fairly high of its own account, very few operators have bothered to try and improve it. The first man to practice it was undoubtedly the late Mr. Forster, of Richmond Ice Works, who stored the first experimental batch of Apples very many years ago. Mr. Forster noticed that the fruit looked a bit dry, and decided on his own account to water it with a common garden watering can, and the result of that storage was every bit as good as any store of to-day.

Some enterprising growers have modified that idea, possibly on having it explained to them some years ago, and are securing very good results with **a little water added.**

Ventilation is strongly linked up with humidity in the direct expansion stores, as when the operator opens his doors to ventilate the store there must be many pounds of moisture deposited on the fruit, cases, etc., from the fresh air. This helps to maintain a high humidity, as through the gentle circulation it is quite a long time before that moisture reaches the coils. Maybe, it never all does reach the coils, which helps to account for the higher humidity. In the near future we may look forward to small machines to automatically discharge moisture into the air of direct expansion rooms to maintain that desired humidity. This is in addition to the already established automatic temperature control and operation of refrigerating plant.

Coil Temperature.

This is another reason for different conditions occupying positions of importance on the rather deep subject of this paper. Direct expansion stores have by far a greater pipe or soil surface than battery stores, while a little frost or ice on the direct expansion coils does not matter much, it is more or less fatal on the battery job. This first acts as an insulation to the coil, and the temperature at which the cooling of the air is being done by the direct expansion pipe surface is much higher than the surface of the battery coil, and consequently the de-hydration of the air is much less. So much importance is attached to this feature that in the small refrigeration world, coils are made with such finned areas to cool a room to 34 deg. without actually frosting, and consequently without very much de-hydration of the air and less shrinkage of the goods stored.

Direct Expansion v. Dry Air.

The foregoing remarks regarding humidity are only a small portion of what may be said on this particular subject, but as the gentleman who set the subject for this paper undoubtedly had in his mind the "relative results" of both systems, it is certain that humidity is the keystone of the issue, and consequently holds the most important place in the paper.

The relative merits of the two systems from an operator's standpoint are greatly in favor of direct expansion, as most of the private stores are operated by men without much mechanical knowledge (with all due respect to them).

Simplicity, as developed in these plants, is the proved keynote of success. That does not mean that there is nothing in the layout of the store. Far from it.

The proportions of chambers and the quantity and spacing of the coils play a very important part, and experience only has given the knowledge which has placed the users of direct expansion plants in the unique position of care-free confidence that their fruit will come out in first-class condition.

This statement does not condemn the dry air or battery system in use in the earlier co-operative stores.

On this subject some few growers still advocate the dry air. Usually that system has been their only experience and in the hands of a skilled engineer, paying strict attention to his brine density and consequent humidity is quite satisfactory.

Some growers for many years have stored in a dry air store, and when unable to obtain sufficient space for their fruit have built stores for themselves on the direct expansion system, and now would never change from that system.

Technically, the facts are as follows:—

Fruit naturally

contains a large amount of moisture,

and if the air in which it is stored is too dry, the moisture in it and the case evaporates, and the fruit shrinks, losing weight and appearance, and sinking in the case. An inexperienced operator on the dry air system might easily get his brine in the battery too strong, so drying the air to such an extent that it greedily takes up any moisture which the fruit is only too ready to give up. Of course, this does not always happen. Many of the older and larger stores have the dry air system, but a skilled operator is absolutely necessary to prevent robbing the fruit of its natural moisture.

The position from a utility aspect is distinctly in favor of direct expansion.

The one disadvantage with the dry air is the fact that no matter how many chambers are in the store, they are virtually one, as the air comes from a common source, and the prevailing odor, as from Apples or Pears, is one.

On the other hand, the direct expansion system gives every room a separate atmosphere. Apples, Pears, soft fruits, for a short period, if you like, can be stored with entire isolation, both as regards atmosphere and temperature.

Butter and meat, if the occasion demands, could be handled at the same time as the fruit, in, of course, separate chambers.

Another utility aspect is in the sub-letting of a single chamber to a grower who can then arrange for any pet temperature or condition that he cares for quite independent of the other rooms.

In the matter of

running a large store

on a small load, the direct expansion again score, as chamber by chamber can be shut off entirely, whereas in the air circulation the control shutters leak, and in many cases shutting down a chamber is not bothered about when it really should be done in the interests of true economy.

Circulation of Air.

This is another most important aspect of the subject of this paper, as it naturally follows that the greater number of times the air passes over the fruit the greater opportunities are available for it to pick up or absorb moisture from the fruit.

In the D.E. stores there are only very slow-moving currents of air caused by temperature difference, whereas in the battery job the powerful fans sweep quite a perceptible movement of air through the rooms.

Shrinking is almost unknown in direct expansion chambers, as the circulation is of a gentle and natural kind, without the use of a fan, and the air does not leave the chamber to be cooled. The actual velocity of the air movements is very low, the atmosphere in the chamber is only changed when ventilated at night or on a cool day, and consequently the humidity remains constant and high without any means of control to just suit the requirements of general fruit storage.

As compared with direct expansion, the battery system gives many more changes of air in the rooms, and if the humidity of that air is too low, it has increased opportunity of absorbing more moisture from the fruit. The battery systems get their cooling efficiency by keeping the coils free from ice or frost, so as to present a clean cold surface of piping to pick up the heat from the incoming air. If the coils were not kept clear of frost, then the engineer could not hold the store down at all, or must run much longer hours with some ice on his coils.

Freezing in direct expansion chambers is easily guarded against by allowing about 9 to 12 inches between coils and cases and ½ in. air spaces between the cases themselves, or providing cleats on top of cases to provide room for free circulation of air. This latter point is equally necessary for both systems of storage.

In summing up the popularity of the two systems, directors and owners of stores who have been faced with alterations and renewals have chosen the direct expansion in every case.

Diamond Creek changed from dry air to direct expansion, Hastings added 10,000 cases, Box Hill 5,000 cases, Blackburn 6,000 cases, all direct expansion. The big Producers' Cold Stores in South Australia is changing to direct expansion.

The old Central Doncaster changed 5,000 cases to direct expansion.

On the question of cost, the finished store figures out much the same. Buildings for dry air are dearer on account of the costly battery rooms, ducts and false ceilings, whereas the direct expansion building is only a matter of simple chambers. On the other hand, the dry air machinery is cheaper to instal, as the quantity of cooling coils is much less than with the direct expansion.

When it comes to maintenance, the direct expansion has it all its own way, as there is no expensive calcium brine to renew or concentrate, no brine pump, no fan. Also the direct expansion coils, being quite accessible for cleaning and painting and free from corrosive influence of the brine, last a lot longer.

In the previous pages a generalisation of the two systems of fruit storage has been given, pointing to the growing popularity of direct expansion.

FRUIT TREE PLANTING.

News of special interest to fruitgrowers is an announcement by C. J. Goodman, whose nurseries are situated at Bairnsdale, Victoria, regarding substantial price reductions. This, right at the beginning of the 1931 planting season, is an opportunity not to be missed. For over 40 years Goodman's have been supplying leading orchardists and nurserymen in all parts of the Commonwealth with trees that have supplied finest quality fruit both for the Australian and overseas market. All trees are guaranteed perfectly clean, healthy, free from insect pests and heavy yielders of finest marketable fruit.

Goodman's Nurseries, which readers are invited to inspect at any time, are near the Bairnsdale railway station, in an exposed position, which causes the wood of the young trees to be hard and well matured. Trees, therefore, do well wherever planted, even under adverse conditions. The nurseries are regularly inspected each season previous to sending out trees, and a clean certificate can be had with each consignment if desired.

Goodman's trees are grown by experts, carefully handled in their digging, grading, yarding, and sent to customers protected perfectly from any injury. All varieties are represented in the stocks now offered. Those interested are invited to write for Goodman's catalogue, containing full details of varieties and offering information regarding planting, etc. Address your communication to C. J. Goodman, Picnic Point Nurseries, Bairnsdale, Victoria, and the catalogue and any other information that you may desire will come to you by return post.

Two beachcombers standing on cliffs looking down at a wreck:

First Beach C.: "That's the 'Mary Hann.' She was homeward bound with a big cargo of cawfey."

Second B.C.: "Did you say corfins?"

First B.C.: "Naw! Cawfey, yer makes tea of."

South Australian Fruit Marketing Association.

A meeting of the Committee of the S.A. F.M.A. was held at Adelaide on April 24.

Present.—Messrs. H. J. Bishop (Chairman), M. G. Basey, J. S. Hammat, D. W. Hannaford, F. B. James, R. O. Knappstein, A. O. Peterson, J. B. Randell, P. R. B. Searcy, R. Willsmore, H. N. Wicks, R. B. Pritchard, and Secretary. Apology received from Mr. E. W. Dearman.

Finance.—Financial statement showing credit balance £302/8/11 was received.

Rough Handling of Fruit.—A grower member reported that he was at the Outer Harbor on Easter Monday when the s.s. "Hobson's Bay" was being loaded, and he was astonished at the rough and careless manner in which the fruit was handled. It was resolved that a letter be sent to the Australian Overseas Transport Association, and also the agents for the vessel in regard to this matter; copy of the letters to be sent to Mr. George Quinn.

Pear Shipment.—Mr. Searcy, of George Wills & Co. Ltd., submitted a report received from London on Pears shipped by the s.s. "Moldavia." It stated that fruit was of good quality, but there was a difference of opinion as to the most suitable container; generally the Canadian case was favored in view of the fact that the same package was used by Canada and U.S.A. Report also stated that trays carry well, but were not as economical as other package.

Messrs. Silbert, Sharp & Bishop advised that the "Jervis Bay" shipment of fruit was good. The method of packing (trays) was considered suitable. In another shipment report stated the tray packing was excellent.

The Chairman stated that in his opinion the extra expense of trays was justified on account of the way fruit carried and opened up.

Government Produce Department reported having received favorable comments on the shipment of half-cases on the s.s. "Moldavia," which realised approximately 8/- per half-case. They had received a request for trays to be used for packing the harder sort of Pears for late shipments. It was resolved that the matter be put on the agenda paper for July for consideration for next season.

Apples and Pears in Same Chamber. — Letter from Overseas Shipping Representatives' Association advising they had communicated with Sydney, but there was no general record available regarding the carriage of Pears in the same Chamber as Apples.

The Victorian Fruit Marketing Association stated that the general opinion of their members was that it was not desirable to ship Apples and Pears together, as, generally speaking, Pears should be carried at 28 degrees, which was generally considered too low for Apples, which are usually carried at from 32 to 35 degrees.

It was resolved to place this matter on the October agenda.

Correspondence.—Report from the representative, Manchester Shipping Canal Company, giving 1929 and 1930 British bank clearances.

Letter from John Lysaght (Australia) Ltd., giving particulars in regard to the galvanised iron industry. Copy of report concerning Australian Apple shipments handed to the Minister of Markets during his recent visit to the United Kingdom, by one of the largest firms of distributors of Apples in Great Britain.

Exchange Position.—Letter from Mr. J. B. Mills, Vice-President of the Victorian Fruit Marketing Association, who represented this Association at the recent conference with shipowners in regard to freight rates on refrigerated cargo. Mr. Mills set out fully reasons for the break down of the conference, which, he stated, were entirely due to recent political proposals. Notes of an interview with the Prime Minister and shipowners' representatives were also submitted.

Research Committee.—The Research Committee reported they had now held two meetings, and they were arranging individual tests in orchards in different districts. The report in regard to the Blackwood orchard had been deferred until the next meeting, as the meeting to decide the future operation of this orchard had not yet been held. Consideration was being given to the question of codlin moth control.

Letter had been received from Victorian Fruit Marketing Association expressing pleasure at the formation of the Research Committee and advising that their best endeavors are always at the disposal of the Committee if they can be of service. It was unanimously resolved to add the following names to the Research Committee:—Messrs. D. W. Hannaford, F. B. James, A. O. Peterson; and the Committee shall have power to add to their number.

A recommendation from the Committee that 12 copies of the 1930 report of the East Malling Research Committee, Kent, England, should be obtained for distribution to the members was approved, and it was also resolved that the Research Committee should go through the list of publications by the East Malling Research Committee and advise which they consider should be obtained.

A USEFUL CEMENT WASH.

The following formula is given by an overseas publication for the preparation and use of a cement wash:—Dissolve one part of salt in as little water as possible and mix into six parts of cement. If necessary add more water to make the mixture take on the consistency of thick cream. The holes and seams of the vessel to be treated should first be plugged with a less wet mixture of the above. The "cream" is then painted over the inside and outside of the vessel.

An old rusted tank treated as described (with two coats inside and out) had since been holding water well over a year, it is stated with reference to the efficacy of the process. More permanent methods of repairing old iron tanks are described in a leaflet obtainable from the N.S.W. Department of Agriculture.

Consign your Fruit to—

J. JAEGER

Telegrams: Jaegagento, London.

FRUIT IMPORTER

18 Bedford Chambers, Covent Garden
London, W.C.2.,

and compare the results with those of the competition.

Try and See.

AGENTS REQUIRED.

Improved Fruit Packing.

Success of Classes Conducted by Department of Agriculture.

Harcourt North Wins the Shield.

THE DEPARTMENT OF AGRICULTURE in Victoria is to be congratulated on its effective enterprise in teaching school children the correct methods of grading and packing Apples, thus bringing about a greater standard of efficiency, as only fruit of the very best quality put up in the most attractive form will enhance the value of our exports.

To make this movement of greater interest to children, the Victorian Fruit Handling Committee gave a handsome shield to be competed for in perpetuity at the Melbourne Royal Show.

State schools having held this for twelve months since its inception are as follows:—Pakenham Upper, 1925; Harcourt, 1926; Somerville, 1927; Ringwood, 1928-29; and Harcourt North, 1930.

In addition to this, four other shields of a similar type were donated last year by the Gerrard Wire Tying Machines under the same conditions as the above, and are competed for at the Somerville, Castlemaine, Pakenham and Croydon horticultural shows, as well as a valuable trophy to be won outright at the Bendigo show, this having been accomplished by the Harcourt North School.

Harcourt North, Vic., Fruit Packing Class.

Last year the Gerrard Challenge Shields were won as follows:—Somerville Show, Pakenham Upper School; Castlemaine Show, Harcourt North School; Pakenham Show, Pakenham Upper School; and Croydon Show, Bunyip School; and this year Harcourt North were successful in retaining their shield at the Castlemaine Show, as well as winning those from the Somerville and Pakenham shows. Owing to the pressure of work in the fruit packing branch, there were no classes conducted in the Croydon district this year, consequently this shield was not competed for.

Pupils attending the classes at Harcourt North are Myrtle Wirth, Hope Bertuch, Rita Bertuch, Rosalie Bertuch, Gwen Jones, Bessie Ellis, Charlie Cox, Tasman Pellas, and Robert Bertuch.

As well as being so successful in the above-mentioned competitions, many of the scholars won individual cash prizes in competitions where as many as five to ten schools were represented.

On April 20 a very enjoyable afternoon was spent at the Harcourt North School. In addition to the scholars, a large number of local residents attended. When Mr. Burfoot, of the Gerrard Wire Tying Machines, made the presentation to the school of the three shields won at the last Somerville, Castlemaine and Pakenham shows, he also congratulated the children for their very fine efforts. Mr. W. James, of Harcourt, who was in the chair, spoke in an interesting manner to the children, stressing the great importance of their work.

Mr. W. H. Harris, Assistant Fruit Packing Instructor of the Department of Agriculture, was also present, and he congratulated the packing class and paid a tribute to their school teacher, Miss Kent. Mr. Harris also thanked the fruitgrowers and packing shed managers for their co-operation in making available such splendid facilities for conducting the classes.

Harcourt North, pupils, teacher and visitors.

NEW ZEALAND.

Heavy Shipments of Apples and Pears.

THE TOTAL export shipment of Apples from New Zealand up to April 29, 1931, was 593,262 cases. From the revised estimates of space requirements of each district made out by the Secretary of the Export Control Board, the season's total export is expected to be 1,246,000 cases. The condition of the fruit is splendid, and there has not been an instance where any shipping company official has questioned it.

Canadian Shipments.—The shipment of 1,000 cases of Jonathans sent by Hawke's Bay growers, successfully passed the rigid inspection at Vancouver.

The N.Z. Control Board forwarded 16,000 cases of Delicious and Jonathan to Halifax on the "Somerset" on May 2.

South American Shipments.—46,000 cases have been sent to South America. However, a cable has been received advising that, owing to bad market conditions, quantities be reduced, and it has been decided that no further quantities will this year be forwarded to South America. The stocks which were awaiting shipment will now be forwarded to the Continent of Europe.—"N.Z. Orchardist."

Fruit Markets in the East.

French Indo-China and Siam.

No. 6 of Series, Continued from Page 276, May "Fruit World."

CONTINUING the summary of the findings of the delegation from California which visited Eastern markets recently, Mr. J. H. Lang gives particulars of conditions at French Indo-China and Siam. Five other articles of this series have appeared in earlier issues of the "Fruit World." The sixth article is as follows:—

French Indo-China.

THIS FRENCH COLONY comprises the eastern portion of the Indo-Chinese Peninsula. It touches China on the north and Siam and Burma on the west. The area is approximately 273,500 square miles, with a population of 20,000,000 persons. Included in these are 500,000 Chinese and 21,500 Europeans, almost all of whom are French. The native population is predominantly agricultural, rice being the main crop. Retail trade is conducted by Chinese and Hindus, who control local finance, banking, etc.

There are about a thousand miles of railway and 10,000 miles of roads, most of which are suitable for motor traffic. It has one of the most highly developed motor-truck services in any country in Asia. This facilitates the distribution of imported products throughout the thickly settled portions.

In 1926 the exports were valued at £25,000,000, two-thirds of which was rice. Imports, £19,000,000. The total imports of fruit and nuts were valued at £56,000 a year.

The policy of the French Government has been to develop trade between France and its colonies. Foreign trade between the colony and other nations has not been encouraged, except in certain primary products that are necessary for the development of the colony.

As the currency of the country is based on silver, the colony as a whole has been depressed by the low exchange value of this metal, and has made it more difficult to import goods into Indo-China.

The diet of the native population consists of rice, supplemented with meat, chiefly pork, and vegetables. Native fruits are eaten between meals rather than part of the regular diet. The number of well-to-do natives is very small, and their scale of living is below that of similar classes in countries under the financial or political control of the Anglo-Saxon race.

Large importations of dried and canned fruits come from China for the use of the Chinese.

Fresh vegetables and European fruits are eagerly sought by the French, the number of whom, however, is so small that their demands are inconsiderable from a trade standpoint.

Imports of fresh fruit

from U.S.A. are small, the largest demand being for Oranges, running 176 to 200 to the box, which cost at Saigon about £2 and retail at 2d. to 3d. each. Malaga Grapes cost 16/- per keg of 32 lbs., Emperor Grapes about £1 per keg, retailing at 1/8 per lb. Apples 16/- per box and 10d. to 1/- a lb. Californian Pears retail at 2d. each.

The fresh fruit market is small, and can be easily overloaded and is also precarious on account of the lack of cold storage facilities and of adequate distribution.

Canned Fruits.

American canned fruits predominate in the high-class stores at Saigon and other cities. In the smaller towns Chinese canned fruits are on sale. Peaches rank first in popularity, followed by Pears, Grapes, and Apricots.

The demand for canned fruits has been gradually increasing, sales being almost entirely in the No. 2½ can. It may be expected that sales will gradually increase in the future, though the opportunities for any large sales are not at present evident.

Dried Fruit.

The damp, humid climate restricts the sale of dried fruit in bulk, to the dry season. With the exception of raisins the consumption of imported dried fruits is immaterial. Prunes are also imported from France, Raisins and Figs from Smyrna, and Dates from the Near East.

Raisins in small packages are consumed extensively by the natives, a small package of 1¾ ozs. retails for about 3 cents, the 15 ozs. package at 12 cents.

Extensive trade promotion in Eastern Asia would have larger results in several other countries than in Indo-China. The difficulties of other Asiatic countries exist in a larger degree and if overcome would bring smaller results.

French Indo-China is being developed by France for the benefit of the French people.

Business houses are French both in nationality and sympathy.

Siam.

THE KINGDOM OF SIAM is an absolute monarchy with an area of 200,000 square miles and a population of 10,000,000 people. Certain areas are thickly populated, while the northern hill country is comparatively uninhabited. The average density is 50 persons to the square mile.

Bangkok is the capital and chief port; 85 per cent. of the imports enter through this city. The capital area has a population of 827,000 persons, and it is here where the most of the foreign goods are consumed. The total white population is only about 2,000 people, of whom three-fourths are in Bangkok.

The Chinese have long dominated the commercial circles of the country. For imported articles the Chinese are almost the only element considered. For years past there has been importation from China aggregating about 100,000 per year. The buying power of the agricultural population is so low and its wants so few that it receives little consideration from commercial agencies.

In 1927 imports into Siam totalled £18,000,000 and exports £22,000,000. About 14 per cent. of the imports were classified as food stuffs, the chief items being sugar from Java, vegetables, fresh and dried fish from China. American food stuffs occupy a very small place in these imports.

The basis of the diet of the people is rice. The use of sweets between meals is common among people able to purchase them. The native fruits are never cooked, but eaten raw.

A certain demand exists among Europeans and high-class Siamese for imported fruits.

The best months for the importation of fresh fruit being November and December. Most of the national holidays and festivals fall at this time of the year, and the weather is less torrid.

Oranges are in small demand owing to the cheapness and prevalence of the native Orange.

Apples are largely brought from Australia. The shorter voyage and excellent keeping qualities of Australian Apples make them popular.

Grapes are the most popular imported fruit into Siam. As these commodities are far beyond the purchasing power of the great bulk of the population, and facilities for the storage of fruit are meagre, the importation of fresh fruit into Siam can only be in very small quantities.

Canned Fruit.—Perhaps half of the American canned fruits imported into Siam is consumed by the foreign population and the other half by educated Siamese and by Chinese. In Siam more than in many other countries, the buying power is concentrated in the capital.

Peaches are probably the most popular canned fruit among foreigners; these are also consumed somewhat by natives and by Chinese.

The demand for canned fruits in Bangkok is small, and from a practical standpoint they have not permeated the country.

Dried Fruits.—The only dried fruit from America having extensive sales in Siam is Raisins, the turnover in other dried fruits being small. Raisins are shipped into Siam in 25 lb. tin-lined cases; each case is usually accompanied by a thousand small envelopes.

Because of the hot, damp climate, dried fruits shipped in bulk or in cartons quickly spoil.

Prunes offer the best opportunity for the expansion of the market for dried fruits.

Advertising in Siam is not a successful method of trade promotion; the people are more likely to respond to some method of personal appeal.

The distribution of free samples at picture shows, and demonstrations before schools are effective methods of trade promotion.

As 70 per cent. of the population derives its livelihood from rice, the country is subject to violent fluctuation in its economic condition, according to the condition of rice. This varying purchasing power vastly increases the difficulty of successful trade promotion.

(Next month, British Malaya, Netherland East Indies.)

THE RIVERINA MOVEMENT.

Now Wields Big Force.

The Riverina movement, under the leadership of Mr. C. Hardy, has assumed considerable proportions, and it now carries much weight with the public.

The movement stands for the abolition of the influence of city politics over country affairs, and the substitution of a provincial council elected on a preferential vote. The Federal Parliament would continue to function in the national sphere, and the Riverina province would send representatives there.

Sugar Agreement.

Delay in Signing.

There was considerable delay in the signing of the sugar agreement, owing to points of difference between the Governments involved.

However, the public is not permitted to know the inner history, though the agreement directly affects every citizen.

The sugar agreement is dealt with as an executive matter, and as such it does not come within even the purview of Parliament.

Western Australia has been particularly severe in attacking the principle underlying the sugar agreement. Senator Colebach, speaking in the Senate on May 15, said that the sugar agreement gave preferential treatment to Queensland over the other States of the Commonwealth. If the growing resentment against this embargo and similar action was not reasonably met, it would ultimately wreck the Constitution.

Fruit Shipments
United Kingdom
and the Continent

W. D. PEACOCK
& CO.
London Fruit Exchange,
Spitalfields, London, E.1.
AND HOBART, TASMANIA
Solicit Consignments
The High Standing and Long Experience of this Firm is a Guarantee that the Best Interests of Consignors will be conserved.

F. W. Vear PTY. LTD.
Fruit & Vegetable Salesmen
Commission Agents
28 New Wholesale Fruit Market,
Melbourne, Victoria
Highest Market Rates Assured
Prompt Settlements

"YARRA"
QUICK BREAKING
White Oil Emulsion
Easy to mix, Effective in result,
Economical in quantity.
Use Now
On Citrus Trees.
PARSONS & JAQUES
Manufacturing Chemists,
6 Patterson St., 155 Yarra St.,
Abbotsford, Vic.
Tasmanian Agents—
N. L. HOPKINS, HOBART.

AN EFFECTIVE ORCHARD BURNER.

An effective orchard burner for the disposal of prunings can be made from a discarded iron tank set on a wheeled framework, and its contrivance should not be difficult for a handy man. The advantages of such a burner are many, remarks a departmental leaflet giving details of its construction. It is quicker, and therefore cheaper, than carting away the prunings, and it is better for the land than drawing a heavily-loaded cart through the orchard. The prunings are destroyed by the fire on the spot along with any fallen fruit, and should they be infested with any insect or infected with disease, the danger of spreading these to other parts of the orchard is lessened.

Orchard burners are also very useful in burning off roots, etc., after ploughing a newly-cleared paddock.

And, said the girl, bravely, "if poverty comes we will face it together."

"Ah, dearest," he replied, "the mere sight of your face would scare the wolf away."

And ever since he has been wondering why she returned the ring.

Sulphate of Ammonia

WESTERN AUSTRALIAN TESTIMONY

Mr. S. E. Hambley, of Mount Barker, Western Australia, writes as follows:—

"I have an orchard composed of 900 apple trees, and two acres of mixed stone fruits. On these I make a practice of applying 2 lbs. per tree of Sulphate of Ammonia in conjunction with Super and Potash, and I have no hesitation in saying that the Sulphate of Ammonia is the most important portion of the fertilisers applied. Two acres of Dunn's Seedling, 1929 season, yielded 928 cases of Standard Export Fruit.

"I also use Sulphate of Ammonia on my oats, peas and kitchen garden crops, and the vigour and yield demonstrates always the value of this fertiliser.

"You are at liberty to use this letter as you feel disposed."

Evidently Mr. Hambley, like many primary producers throughout Australia, knows a good thing when he sees it, and is satisfied that ——

SULPHATE OF AMMONIA PAYS

Literature and Advice from:—

NITROGEN FERTILISERS PROPRIETARY LIMITED,
360 Collins Street, Melbourne,
or Box 235, Haymarket, Sydney.

NEW SOUTH WALES

N.S.W. CITRUS CROP.

Review of Crop Conditions.

The following survey of the conditions prevailing as at May 1, 1931, in the citrus orchards of the State of New South Wales, including those within the Murrumbidgee Irrigation Area, is based upon reports received from Fruit Inspectors of the Department of Agriculture and Crop Correspondents.

A. A. WATSON,
Director of Marketing,
May 6, 1931.

Gosford:

The excessive rainfall during the month was responsible for erosion in some orchards, and in parts has caused a heavy fall of intermediate crop Oranges. It is stated that the shedding of Mandarins was pronounced in parts of the district.

The Navel crop is well forward. Generally good development is apparent in Valencia crops. Some of the trees are showing the efforts of too much moisture—the foliage turning yellow. Intermediate crop fruit is begin marketed.

Oonshi Mandarins are being marketed, and some Imperials are now ready to harvest.

Main crop Lemons are maturing earlier than usual, and good crops should be picked. The trees are blossoming in parts of the district.

The Grape Fruit crop at Peats Ridge was affected by the wet weather and a light fall occurred.

Wyong:

The floods in this district were responsible for heavy damage to the Navel crop; other varieties were affected to a lesser extent.

In the Dooralong and Wyong Creek areas it is estimated that 3,000 cases of good fruit were spoilt.

The Common Orange crop is coloring; a few lots being marketed.

A good crop of Lemons is in sight, and the fruit is beginning to color.

Windsor:

The abnormal rains during the month brought about a heavy shedding of both mature and immature fruit.

Snails are exceptionally numerous and are doing much damage.

Navel Oranges are being marketed freely, and indications are that the bulk of this crop will be harvested earlier than is usual.

Crop yield prospects of Valencias have been reduced owing to the quantity of fruit that has fallen or is still likely to do so.

Marketing of Silettas is proceeding, the fruit being of good quality.

The Seville crop is well grown and clean, although only light yields are expected.

Mandarins are coloring, and it is expected that some marketing of this fruit will commence very shortly. The fruit has "sized" well and should be of good quality.

Richmond-Kurrajong:

In this district heavy fallings of Navels and Valencias occurred and where side crops were grown some erosion took place owing to the heavy rains during the month.

The Navel and Common Orange crops are well forward, and some marketing of both varieties has taken place.

The Seville crop is well grown, but is not showing much color.

Imperial Mandarins are fit for market.

There are heavy crops of Lemons in sight.

Hills District:

Heavy falls of rain registered during the latter half of the month were responsible for erosion in some orchards, and also for the loss of fruit.

A considerable shedding of Valencias has taken place in parts of the district, but generally this crop appears to be developing well. Intermediate crop fruit is being marketed.

The Common Orange crop is very forward and the fruit is stated to be exceptionally good. Silettas are being marketed.

Mandarins are showing favorably in parts, but in some crops the fruit is uneven in size and on old trees is not developing well.

There is a good deal of bloom showing on Lemon trees and a good setting should result. The main crop is growing rapidly, and the fruit is stated to be of good quality.

Hawkesbury:

In the Mangrove Creek area, considerable damage was caused by flood waters, and it is expected that much shedding of fruit will eventuate. Some slight splitting and falling of fruit occurred in the Wiseman's Ferry centre.

Navel and Common Oranges (principally Silettas) are being marketed from this district.

The Seville crop around Wiseman's Ferry appears to be backward.

The Mandarin crop is showing color and should soon be fit to market.

Heavy crops of Lemons are in sight, and some of the fruit is inclined to be large.

Hunter:

In the Singleton district the Navel crop has matured much earlier than usual, and quantities have been marketed.

Recent rains have improved the Valencia crop in the Copeland, Singleton and Moorland centres. Some Silettas are ready to market at Moorland and in other centres the crop is nearing maturity.

The Mandarin crop is light generally; some early varieties are marketable.

Penrith:

In this centre there is a fair crop of good quality Navels, and marketing of early varieties is about to commence.

It is expected that a normal crop of Common Oranges will be harvested. White Silettas are ready for market.

Only very light crops of Mandarins are in sight; the fruit is of medium size and coloring.

Heavy crops of well-developed and good quality Lemons are showing.

Growers anticipate a medium crop of Grape Fruit.

Western:

At Forbes a few scattered showers were experienced during the month, over an inch of rain falling.

The heavy Navel crop is coloring well, the fruit is of good quality and some marketing is proceeding.

No change is reported in Valencia, Common Orange and Lemon crops. Only light yields are expected.

On irrigated areas, the Mandarins are coloring, and should be ready for market at an early date.

Narromine:

Good rains were experienced in this centre.

The Navel crop shows excellent promise, both in yield and quality, and marketing is about to commence.

Good development is taking place in the light Valencia and Common Orange crops.

Good crops of Grape Fruit are showing, and the fruit promises to be of excellent quality.

Dubbo:

The rather light Navel crop is beginning to color.

Fair crops of Valencias, Common Oranges and Lemons are in sight.

Murrumbidgee Irrigation Area:

On the Murrumbidgee Irrigation Area the Navel crop is expected to yield better than was previously anticipated. The fruit is coloring, and it is likely that small consignments will be marketed in about a fortnight. No change is reported regarding other citrus crops.

QUEENSLAND.

Extending Citrus Levy Regulations.

A regulation has been issued under the Fruit Marketing Organisation Acts making provision for the extension for a further twelve months of the citrus levy regulations.

These regulations are similar to the previous ones, with the exception of an alteration in the amount of levy on the bushel cases, this being altered from 1½d. to 1¼d. per case, and will operate in respect of citrus fruits marketed for the period as from March 1, 1931, to February 28, 1932.

The levy shall be payable by the growers of citrus fruit at the rate of 1¼d. per bushel case and ¾d. per half-bushel case, and 5/- a ton shall be payable on all citrus sent to fruit canners, fruit preservers, jam or pulp manufacturers, or juice extractors. The levy shall be collected by levy stamps obtainable from the head office of the Committee of Direction, Brisbane, and which are affixed to account sales, etc. This entitles the agent to deduct the value of the levy from moneys held to the credit of the growers concerned.

The levy will be expended in the interests of the citrus fruit growing industry of Queensland and in advertising in the interests of the growers.—"Queensland Agricultural Journal."

VICTORIA.

There has been no alteration in the citrus crop prospects since last month's estimate, viz., 500,000 bushel cases of Oranges, Mandarins and Grape Fruit, and 190,000 bushel cases of Lemons.

The crop is coloring early, and will probably reach maturity a fortnight or three weeks earlier this year.

EXPORT OF CITRUS FRUIT.

Referring to the recently issued report of the Citrus Preservation Committee (Council for Scientific and Industrial Research) published in May "Fruit World," the Chairman of the Committee, Dr. W. J. Young, writes under date May 6 that there was an unfortunate error in the dimensions given for the case to be used in the export of the fruit.

The error was made owing to a general misunderstanding in Victoria as to the exact size of the export case.

The dimensions should have been those of the Californian citrus export case, namely, 24 x 11½ x 11½ inside measurements, and a correction to this effect has been made in the recommendations which have now been printed, of which copies are now available.

A well-grown Lemon grove in the Bairnsdale (Vic.) district. These trees bear two heavy crops yearly.
(Illustration by courtesy of C. J. Goodman, Bairnsdale.)

Victoria.

IN A REPORT received from the Department of Agriculture (Horticultural Division), the following information was conveyed:—

Deciduous Fruit.

Despite the light Apple crop and a fairly large percentage of fruit which had to be excluded owing to hail marks and over-size, the quantity shipped to May 1 exceeded the estimate by over 6,000 bushels. It is also gratifying to learn that the fruit, generally, arrived in good condition. The prices realised, when the exchange advantage is considered, were very satisfactory.

As pointed out in a previous report, a late infestation of black spot reduced appreciably the quantity of fruit available for export. The Pear crop suffered most from this late infestation.

Up to May 1, 537,561 packages of fruit were shipped overseas to the United Kingdom and Europe, comprising 350,473 cases of Apples, 177,280 packages of Pears and 9,808 packages of Plums.

The buds on all kinds of fruit trees are developing well, and there is every indication of a good to heavy crop next season.

Viticulture.

March ended with a rainfall of 4.64 inches at the Rutherglen Viticultural Station. The rain was renewed in April, especially on 1st and 15th, to which date three inches was recorded. It has since been fine (until 25th). Two slight frosts occurred on the mornings of 8th and 9th, but the weather being mostly mild.

The Victorian vintage is now over; all but a few wine Grapes have been gathered, and there are some dried Grapes still on the racks, late picked and held up in the drying by the rains.

It is rather early to forecast the yield. The wine vintage should be much the same as that of 1930. Some of the larger growers who sprayed properly have vintaged more than last year—almost a normal vintage in fact. On the other hand many smaller growers lost some, and in a few cases all their crop from downy mildew.

The quality is on the whole satisfactory, though Baume gravities have been patchy and in some cases disappointing—several wineries reported high gravities in March, but rain and in some cases, hail, have interfered with later pickings.

In the irrigation areas the vintage has been somewhat disappointing. The very considerable reduction in Sultanas has previously been referred to. The shrinkage may reach 40 or even 50 per cent. Currants will also show a reduction, though a lesser one; but it should not exceed 14 per cent. Lexias and Walthams seem to be much as last year. The drying season started well, and much excellent fruit was produced. The good weather did not last, and the latter part of the season was much less satisfactory; rains interefered with drying operations and reduced quality.

The season is favorable for green manuring and cover crops have been extensively sown. On many blocks peas and beans are well above ground.

A gratifying improvement in the dried Grape outlook is to be reported. London Sultana prices have improved, apart from the exchange, which favors Australian growers. Greek and Smyrna vineyards have suffered from frost and Californian competition is less active, owing to the reduced output achieved by the U.S.A. Farm Relief Board.

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COMMENTS ON THE RETAIL TRADE.

To the Editor of "The Fruit World."

The shopkeepers in the metropolitan area are experiencing a very trying time at present, and many of them have been forced to close owing to the acute financial distress coupled with the competition from the ever-increasing number who are forced through lack of other employment to try to earn an honest living by selling fruit and vegetables from door to door. Fruiterers suffer more than any other tradespeople in this respect. Although Potatoes and other vegetables are cheap, the public are buying very small quantities, and the aggregate takings in the great majority of shops are very limited. However, shopkeepers are optimistic and look forward to better times ahead. Fruit never sold so slow as at present, and it would be to the citrus fruitgrowers' interest if they refrained from forwarding so many Oranges along until they were more matured than at present.—Edw. W. Thompson, Secretary, Melbourne and Metropolitan Retail Fruiterers' Association.

Truth is the hand-maiden of Justice, Freedom is its child, Peace is its companion, Safety walks in its steps, Victory follows in its train; it is the brightest emanation from the Gospel; it is the attribute of God.—Sydney Smith.

Tasmania.

SELECTING, GRADING, AND PACKING FRUIT FOR EXPORT.

AT THE INVITATION of the Clarence Agricultural Bureau, Tasmania, the Chief Horticulturist, Mr. P. H. Thomas, addressed members at Sandford on the subject of selecting, grading, and packing fruit for export.

The Hon. Jas. Murdoch, M.L.C., presided over a good attendance. A vote of sympathy was passed to the relatives of the late Mr. O. G. Morrisby in their sudden bereavement. Mr. Murdoch referred to the sterling character of the deceased, who was one of the pioneer settlers and respected throughout the district. The motion was recorded, members standing in silence.

Mr. Thomas briefly reviewed the development of the fruit export industry and instanced that whilst Tasmanian Apple exporters had the overseas trade almost to themselves in the early days, the present competition necessitated every effort being put forward to ensure that we retain our place on the markets.

Careful Handling Imperative.

Commencing at the picking operation, the lecturer dealt with the importance of adopting methods which will preclude bruising. Investigations made this season showed that in some instances bruising had taken place before the fruit was put through the sizing machine, and was found to be due to the careless use of picking bags.

Some interesting lantern slides were shown in respect to the maturity of fruit exported. Mr. Thomas explained the process of ripening and how by the iodine test, the maturity could be gauged. Reference was made to the experimental work carried out during the past two seasons in respect to the development of bitter-pit and how the maturity of the fruit at picking had been found to be closely related to the development of the disease. It is important, said the lecturer, that the early shipments arrive on the overseas markets in a sound, attractive condition. Consumers are eagerly looking forward to the Australian and New Zealand fresh Apples and **if the early shipments** arrive in a green or shrivelled condition, or with bitter pit, even a jaded taste, will return to the American cool-stored article, prices will be affected, and once this happens it is generally some time before confidence is restored amongst buyers.

What Cases do Buyers Prefer?

A discussion took place in regard to the different containers used for export. Mr. Thomas stated the number of different types of cases now in use were creating difficulties in respect to stowage and instanced the desirability of a uniform case. "I am anxious to see the best type of case used for our exports," he stated. "Experiments are being conducted this season which, it is hoped, will give a good deal of reliable information in respect to this matter. There is one thing the fruitgrower must remember—'The buyer has some say in the type of container used for his purchases, and in present-day business the world over, the policy of the manufacturer or producer is to cater for the requirements of their customers.' "

In concluding the lecture, the **export grade standards** were briefly reviewed and the requirements clearly explained.

The importance of evolving a satisfactory method of handling small consignments and converting them into bigger lines of fruit, was stressed.

If closer attention could be paid to these details, and uniform classification of fruit could be adopted by the growers and packing sheds, it would materially improve the export trade and provide a practicable basis for contracts and purchases upon which buyers and sellers can deal with mutual confidence and understanding.

The meeting concluded with a vote of thanks to the lecturer for his helpful address.

CANADA AND AUSTRALIA.

Big Mutual Trade is Possible.

Immediate Completion of Trade Treaty Urged.

Canada Would Take Our Fresh, Dried and Canned Fruits in Return for Her Products.

(By Our Representative.)

THAT AUSTRALIA should at once ratify the trade treaty with Canada is the emphatic opinion of Mr. Arthur Weymark, who recently went to Canada and disposed of 26,000 cases of Australian citrus fruits.

Mr. Weymark states that Canada is most anxious to trade with Australia. When in Canada he interviewed the leading politicians and cabled to Australia to Mr. Scullin and Mr. Parker Moloney, but the Federal Government were busy and would not act in the matter. In the meantime, Australia is suffering to a far greater degree than she knows of. Canada will take our canned fruits, dried fruits, prunes, butter, rice, wines, etc., while we want paper, softwoods, etc., etc.

The Canadian Budget is now due, and the Federal

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authorities should endeavor to act at once. On Mr. Weymark's return from Canada he induced a fruit cannery and Sydney firm to send a man to Canada, also a representative of Penfolds with wines.

So when business firms wake up it is time the producers did their share towards waking up the Federal Government. All fruitgrowers' troubles would be over for surplus fruits—dried, fresh and canned—if Canada protected us from U.S.A., as with 11 millions of a population our surplus would easily be consumed: all we want the Commonwealth Government to do is to ratify the trade agreement between Canada and Australia. "I believe there is an embargo against Canadian Apples," continued Mr. Weymouth. "If this were removed it would not hurt us, excepting, perhaps, for 1 or 2 months of our scarce period of the year, so that we cannot expect them to take our Apples while we prohibit theirs. New Zealand is benefiting by the Canadian Trade, but not Australia. Why is this?"

Mr. Weymark added that a strong feeling in favor of inter-Empire trade, and especially for reciprocal trading between Canada and Australia, exists in the sister Dominion, not only on the Pacific Coast, but also in the Eastern Provinces. The people are only too anxious to do business in the Empire, and so well educated are the public to the benefits of fruit juices that Canada could easily absorb the whole of the Australian surplus of such products.

Similarly, there is a wonderful market there for canned fruits, and from actual experience Mr. Weymark contends that our own canned fruits are in every respect the equal of the Californian product.

As regards sugar, Canada would be prepared to take the whole of the Australian exportable surplus, but naturally would want it at world's parity.

Mr. Weymark paid a tribute to the energy and sincerity of Mr. Parker Moloney (the Minister for Markets), and urges that it is up to the Federal Ministry to complete the good work which this gentleman did in Canada towards bringing to fruition closer trading relations calculated to be of inestimable benefit to both countries.

DRIED FRUITS.

New Regulations in New South Wales.

AMENDMENTS AND ADDITIONS to the regulations under the New South Wales Dried Fruits Act have been made to provide:—

(1) For receipt notes to be issued immediately upon delivery of dried vine fruits to packing sheds, the original of same to be issued to the grower or any other person delivering the fruit and the duplicate to be retained in the packing shed for production to a member of the Dried Fruits Board, an inspector or other authorised person.

(2) That no dried vine fruits are to be removed from any packing shed unless and until a release note on the correct form has been issued by the inspector.

(3) For all dried vine fruits to be delivered to packing sheds in wooden containers only.

(4) That dried vine fruits are not to be sold or offered for sale or purchased unless:—

(a) Same have been packed in a registered packing shed.

(b) Same have been packed, graded and branded in accordance with the regulations made under the Dried Fruits Act.

This regulation provides that the above will not apply to the sale of dried vine fruits by a grower to a packing shed for the purpose of being processed or packed or to a sale by a registered packing shed to a winery or distillery for distillation purposes.

(5) That the maximum amount of drawback fruit which may be issued to any grower by a packing shed shall be 56 lbs. of each variety of dried vine fruit which has been supplied to the packing shed by the grower.

(6) For cases containing drawback fruit to be conspicuously branded with the letter "D."

"Your wife is talking of going to Queensland this winter. Have you any objections?"

"No, certainly not. Let her talk."

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On Mazzard Seedling Stocks.

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FIGS—All sorts.

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All on Peach stocks.

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Double Flowering Peaches

Red, White.

Pears

All on Seedling Stocks.

Bartlett (Williams' Bon Chretien), Beurre Bosc, Clapp's Favorite, Doyenne du Comice, Howell, Josephine de Malines, Keiffer's Hybrid, Packham's Triumph, Winter Cole, Winter Nelis.

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(W-McF.)

Insect Pests of Strawberries.

Red Spider (Tetranychus telarius).—This small mite is a common source of trouble in Strawberry gardens. The under surfaces of the leaves may become heavily infested, and on a badly-infested leaf mites in all stages of development may be seen crawling about or feeding under the shelter of a very fine web which they spin over the surface of the leaf. The mites damage the leaves by sucking up the sap, and when they are numerous the infested leaves become greyish-white in color and the vitality of the plant is seriously impaired.

Once the plants have commenced to bear it is largely impossible to control the mites without affecting the fruit with the spray, and every effort should therefore be made to control the mites before the fruiting period begins. The practice of burning off is a valuable method for destroying mites and insects that may be sheltering on the plants. A number of insecticides, such as lime-sulphur and flowers of sulphur or other finely divided sulphurs now obtainable, can be recommended for the control of the mites before the plants are bearing fruit. The lime-sulphur is applied as a spray at the rate of 1 gallon to 60 gallons of water, and a thorough application is necessary for the best results. The sulphur dusts are best applied with a knapsack duster and give excellent control. The powder should be blown well into the foliage of the plants.

The chief consideration in the control of mites is the early application of the spray or dusts, as little can be done when the mites become very numerous or when the plants have reached the fruiting stage.

Strawberry Weevil (Rhinaria perdix).—This insect is of comparatively rare occurrence in New South Wales. The adult beetle is about one-third of an inch in length, with a snout or beak characteristic of all weevils. Owing to the presence of patches of chocolate brown and creamy white scales, the beetle has a variegated appearance. The eggs are laid in the crown of the plant, and the larvae on hatching burrow into the hard woody tissue beneath, where they feed until fully developed, when they are thickset white fleshy grubs with small brown heads and without legs. They pupate in the cavity made by them in feeding, and the adult beetles emerge in the spring.

As soon as plants show any signs of being infested they should be pulled out and burnt to prevent the adult beetles from developing, thus reducing the possibility of further infestation.

White Curl Grubs.—These are the larvae of a number of different species of beetles belonging to the family Scarabaeidae. By far the commonest and most destructive species is the bettle known as **Sericesthis pruinosa.** This is a yellowish-brown beetle about three-quarters of an inch in length, which lays its eggs in the ground. The small white grub which hatches from them feeds upon the roots of Strawberry plants, particularly on the hard wooden portion of the root, until full grown, when it is a fleshy white curl grub about three-quarters of an inch in length. It pupates in a regular earthen cell in the soil, and the adult beetles emerge in the spring.

When the grubs are abundant in the soil the root system of the plant may be so badly injured that the plants are rendered useless or are entirely killed by the grub attack. The difficulty of controlling such underground grubs is notorious throughout the world. Extensive experimental work has been carried out by the Entomological Branch of the Department, and many soil fumigants, such as carbon bisulphide and paradichlorobenzene, have been tried, but with only partial success. A new method of treating the soil with a mixture of sawdust and tar distillate, however, has given more promising results. The sawdust is made into a mash by mixing with a 10 per cent. tar distillate emulsion in water, using 2 to 3 gallons of the solution to each 24 lb. of sawdust. The mash is spread over one bed at a time at the rate of 5 tons per acre and then well mixed with the top 4 inches of soil with a hoe or other implement. It is not yet definitely known what effect the tar distillate solution will have on the plants, although when planted in an area treated as above they showed no ill effects. It would perhaps be as well to allow the treated area to stand a fortnight or so before planting. It is essential that the sawdust be well mixed through the soil in order that it may come in contact with the grubs. While this method has given promising results and may be valuable when small areas are to be treated, further experimental work is needed before it can be definitely recommended.

Plant Bugs.—A number of species of plant-sucking bugs attack the ripening fruit, but such attacks are rare and are generally not serious.

Natural Parasites.—A number of parasites attack the larvae of the abovementioned beetles, but do not appear to exert any appreciable control.

Diseases.

Chief of the diseases of the Strawberry are black spot and mildew. For these an early spraying with Bordeaux mixture is the best method of control.

(From Bulletin, N.S.W. Dept. of Agric.)

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Victorian Fruit Marketing Association

The monthly meeting of the Executive of the Victorian Fruit Marketing Association was held at the office of the Superintendent of Horticulture, Melbourne, on April 29. There were present:—Messrs. H. G. Colombie (Chairman), K. Eagle, F. Cave, G. W. Brown, A. S. Harrison, W. H. Carne, W. A. Webb, F. R. Mellor, C. H. Jost, and the Secretary. Mr. J. M. Ward, Superintendent of Horticulture, was also in attendance.

Pear Export.—Mr. C. H. Jost wrote, stating that the Departmental inspection of Pears was too strict, and Quantong growers had refused to pack Pears for export.

Mr. Ward stated that this season many complaints had been received from growers and exporters because of the slackness in Pear packages. Owing to excess moisture in the fruit, packages containing Pears arrived in slack condition, and had to be reconditioned before shipment. This was particularly noticeable with the Pears packed before being pre-cooled. The Department recommended that no Pears should be packed before being pre-cooled, and if this was impossible at the orchard, fruit should be sent in bulk to stores where they could be pre-cooled before being packed so that growers could be ensured that there would be no trouble at the time of shipment. There had been no complaints of slack pack with the Doncaster Pears, these Pears having been pre-cooled before packing.

With regard to the package, Mr. Ward stated that the long flat bushel was unsatisfactory. No other part of the world used this type of case. It was particularly unsuitable for the tender-skinned Pears from the Goulburn Valley. Cases should be made of dressed and seasoned timber whether hardwood or softwood. It had been noted that packages made from freshly cut Pinus insignis, whilst giving the bulge at the time of package, were not sufficiently resilient to keep the pack tight as the fruit settled down. It was noticed that the bulge in the timber remained, having lost contact with the fruit.

Fruit Cases.—Mr. Mellor reported that the Tariff Board had applied to him for certain particulars re fruit cases and asking for details of quotations received. Mr. Mellor asked for the instructions of the Executive and for particulars from growers and exporters regarding the suitability of softwood and hardwood cases. In the discussion that followed it was stated that application had been made for the withdrawal of the drawback on softwood cases exported. Mr. Webb stated that at conferences sawmillers submitted excellent samples; growers would be satisfied if they could obtain similar cases. When delivering in bulk, however, the cases were very unsatisfactory.

Mr. Eagle stated he had tested, this season, various types of cases in seasoned and unseasoned hardwood—cases of local Pinus insignis, also cases made from imported shooks and cases made locally from imported logs. The only real satisfaction obtained was from cases made from imported shooks. Cases made locally even from imported softwood logs were unsatisfactory.

Mr. Cave stated he had consulted ships' engineers throughout the season and almost without exception the Canadian softwood case was advocated. Mr. Brown stated his experience was altogether in favor of the Canadian softwood case. He moved:—

> "That growers having carried out their promises to timber millers to give the millers an opportunity to supply the growers' case requirements and many deliveries having proved unsatisfactory, this Association reaffirms its desire to retain entire freedom regarding the use of any type or shape container and that no change be made in the present arrangements regarding the source and mode of supply of timber."

This was seconded by Mr. Harrison. Carried.

VICTORIAN FRUIT MARKETING ASSOCIATION.

THE monthly meeting of the Executive of the Victorian Fruit Marketing Association was held on May 29. There were present: Messrs. Colombie (Chairman), Carne, Bailey, Cave, Eagle, Ford, Harrison, Brown, Webb, and the Secretary. Other members present were Messrs. S. E. Scott, J. M. Jacobs, Vail and D. W. Grieve (Somerville).

While the inspection of fruit for export was generally satisfactory, several complaints from Gippsland were tabled, and it was decided to ask the Markets Department to convene a conference of Victorian Fruit Inspectors to meet the V.F.M.A. Executive to decide on a uniform system of inspection.

Locally-made fruit cases were deemed unsatisfactory, and it was decided to ask the Minister of Customs to see that no alteration was made in the present system of importation of softwoods.

For the forthcoming meeting of the Australian Apple and Pear Export Council, a tentative date was suggested, August 19 and 20, at Melbourne. The following items were listed for discussion:—Grading regulations; The fruit case question; Freight on export fruit; forecasting crops; Australian representative for England (as per letter from Markets Department and invitation from Empire Marketing Board); Formation of Overseas Committee; Pear export; Stowage of fruit for export; Uniform inspection; trade with the East; Duty on Australian fruit entering Germany; Co-ordination of States and distribution of shipments; Hail insurance.

With regard to research work, for the Interstate Committees to meet and deal with the subject of biennial cropping of fruit trees and other matters; Dr. Rivett (Council for Scientific and Industrial Research), to be asked to outline the activities of the Research Council.

It was decided to ask the Federal Government not to curtail its research work.

Appreciation was expressed for the improved assistance rendered by the Victorian Department of Agriculture with regard to the loading into ships holds.

MEETING AT DONCASTER.

Pear Marketing Discussed.

Under the auspices of the Victorian Fruit Marketing Association, a district rally of fruitgrowers was held at the Athenaeum Hall, Doncaster, on May 27, Mr. W. A. Webb presiding. Mr. J. M. Ward (Superintendent of Horticulture), and Mr. E. E. Meeking (Senior Fruit Inspector), were in attendance, also several shipper members of the V.F.M.A., including Messrs. A. S. Harrison (I.F.M.), C. J. Parnham, N. N. McLean, and E. I. Lawford. Growers attended from Doncaster, Ringwood and surrounding districts.

Mr. H. G. Colombie (President V.F.M.A.), spoke on "Fruit Marketing in U.K. and the Continent," with special reference to Pear marketing. He quoted figures showing the large increase of Pear acreage in U.S.A. He urged growers to decide on a uniform package for Pears, in order: (a) to secure proper stowage on ships; and (b) so that buyers could become familiar with a standard package. Mr. Colombie then outlined the activities of the V.F.M.A. from its inception and told of its effective service on behalf of growers.

Resolutions were carried on the motion of Mr. W. A. Thiele: (1) urging the Federal Government to amend the tariff arrangements with Germany, as that country imposed an extra duty of 1/6 per bushel on Australian fruit; (2) requesting a general lowering of the Australian tariff, as primary producers were suffering under the present tariff schedule.

Mr. A. E. Hocking (President Fruitgrowers' Cool Stores Association), stated that in standing as a candidate for the Legislative Council (Southern Province), he would, if elected, use his best energies to assist in placing our national finances on a sound basis. The interest of primary producers were paramount. He would oppose the proposed Marketing and Primary Products Bill.

PLUMS AND RASPBERRIES.

Bulletins from Canada.

We acknowledge having received the following Bulletins from Canada.

"Diseases of Plums and Their Control," by G. H. Berkeley, M.A., Ph.D., Senior Plant Pathologist, Dominion Laboratory, St. Catherines, Ontario, Canada, dealing with black knot, brown rot, plum pockets, shot hole or leaf spot, silver leaf, winter injury; and giving spray schedule. Pamphlet No. 119.

"Diseases of the Raspberry," also by G. H. Berkeley, M.A., Ph.D., the chapters deal with: mosaic and leaf curl, certified Raspberry stock; rosette, or bramble streak of Black Raspberry, verticillum wilt, spur blight, crown gall, anthracnose. Pamphlet No. 120.

WILT RESISTANT TOMATOES.

Two varieties of wilt-resistant Tomatoes are referred to favorably in the "Florists' Exchange," U.S.A., and the "Fruit, Flower and Vegetable Trades' Journal," England.

These varieties were raised in the Illinois Agricultural Experiment Station. The varieties are Lloyd Forcing, in honor of Dr. J. W. Lloyd, of the Department of Agriculture, Illinois, and Blair Forcing, in honor of Dr. J. C. Blair, head of the Department of Horticulture at the Illinois Agricultural Experiment Station.

Beat That!

The suburban husband was about to leave his home for the station, when his wife detained him.

"John," she said, "I wish you'd go to the kitchen and give Bridget a good talking to before you go to business."

"How's that?" he asked. "I thought you were very satisfied with her."

"So I am," replied his wife; "but she's beating some carpets for me this morning, and she does it better when she's angry."

Rockhampton

The starting point for the Great Queensland Central Railway has a population of 30,000, and offers a good market for your fruit.

ORCHARD FRUIT SUPPLIES

offer a prompt and reliable selling service. Best Prices. Prompt advices and returns.

Reference:—Australian Bank of Commerce.
'Phone: 1584.
P.O. Box, 223. Brand: ORCHARD RTON.

SHIPMENTS TO ROTTERDAM.

To the Editor of "Fruit World."

Dear Sir,—Mr. Colombie has sent us copies of the articles written in the "Fruit World" by Mr. Barker, and we are very surprised at the contents of same. We are at a loss to understand how people can think that the Dutch fruit market is dependent upon Hamburg, while our imports here are about the same as those of Hamburg. Hereunder we indicate the quantities of American Apples and Spanish Oranges arrived up to now in Holland and Hamburg, and at the same time we state the quantities arrived in the principal English market, which enables you to make a comparison between the different European markets. We believe that these particulars are self-explanatory and prove that our market belongs to the big leading European markets.

Everyone who has read something about the history of our market knows, that since the war Holland has become one of the most important fruit-selling centres of Europe. The writer in question shows no evidence of knowledge regarding the commercial and financial position of our small country.

Imports of Spanish Oranges, up to this stage of the season:—

Holland	1,832,000	cases
Hamburg	1,563,000	„
London	1,407,000	„
Liverpool	1,075,000	„
Glasgow	186,000	„
Hull	297,000	„
Bristol	207,000	„

Imports of American Apples, up to this stage of the season:—

Holland	3,190,000	bushels
Hamburg	3,990,000	„
London	3,124,000	„
Liverpool	3,180,000	„
Glasgow	1,570,000	„
Hull	380,000	„

Rotterdam had in 1930 a total import of £200,000,000, and a total export of £150,000,000.

Yours, etc.,

ALGEMEENE VRUCHTEN IMPORT
MAATSCHAPPIJ (N.V.).

Rotterdam, Holland, 2/4/31.

FRUIT FLY IN BLACKBERRIES.

Fruit fly larvae was recently discovered in ripe Blackberries in the Hawkesbury district. The Senior Assistant Entomologist (Mr. McCarthy) states that although the fly had been found in other wild fruits, it had never been previously found in the Blackberry. The fruit fly has been unusually prevalent during the past few months.

John Brunning & Son, Somerville Nurseries, Somerville, are offering in their advertisement in this issue fruit trees, including Apples, Pears, Plums, Peaches, Figs, Cherries, Oranges, Mulberries and many others, also Almonds, Walnuts, Chestnuts, etc.

It MAY Mean
The SURVIVAL of the FITTEST ! !
They will be those who go in for
BALANCED MANURING
NITROPHOSKA
Has now had time to prove to many wise growers that it gives
BOTH QUANTITY AND QUALITY
for all classes of fruit
ANALYSIS :
NITROGEN . 16% PHOSPHORIC . 16.5% POTASH . 21.5%
Limited Supplies Only Available. ORDER EARLY from your packing shed or from
HENRY H. YORK & CO. PTY. LTD.
573-585 Lonsdale St., Melbourne

VEGETABLE CULTURE

(By "Syringa.")

Sowing, Planting, and General Notes.

IF BROAD BEANS have not been sown, it is not yet too late to put a few in to give a supply of this most valuable vegetable in November and December.

Winter **Cabbages** usually run to seed in spring, and, therefore, a sowing should be made now for a crop to follow the winter supplies. Two varieties worth sowing now are **Early Parisian and Flower of Spring.** Most of the other varieties would probably run to seed, but the above-mentioned sorts can safely be sown now, without running to seed.

For use in November, make sowings now of **Late Metropole Cauliflower.**

Sow a row of two of **Hollow Crown Parsnip** and **Crimson Giant Forcing** or **White Icicle Radish.** These varieties of Radish will mature quickly if sown in a well-drained and warm position.

Continue sowing the prickly or winter variety of **Spinach,** and a further small sowing of **Non-Seeding White Turnip** can be made.

The varieties of **Lettuce** which can be sown now are **Iceberg, Hanson and Drumhead.**

Brown Spanish Onion seed should be sown in a firm bed, and the young plants thinned out early to standing distance. Be sure that the bed is at all times kept free from weeds. To force on Onions, apply nitrate of soda.

For those who are fond of **Garlic** in prepared dishes, planting of sets should now be made. Plant in drills with about 5 inches between the sets. The plants are perennials, and if kept weeded and thinned frequently will last for some time.

Although it is not a good time to make very large sowings of **Peas,** a few rows of Daisy, **Green Feast** or **Day's Early Sunrise** should be put in for picking in October. The latter variety is exceptionally hardy, and a good and safe cropper in early spring.

Red Beet tops that are not making good roots can be cut and used as Spinach.

A few roots of **Celery** should always be left in the ground throughout the winter (not necessarily trenched or blanched) for use in soups.

In planting out **Cabbage** and **Cauliflower** seedlings, choose well-drained, open ground. Applications of sulphate of ammonia, nitrate of soda or Floraphos will be found beneficial in promoting growth.

During this month plantings should be made of **Artichokes** (both the Globe and Jerusalem varieties), **Asparagus, herbs, Rhubarb, Shallots,** and **Sea Kale,** as well as **Strawberries,** plants of which are most useful for edging the various vegetable plots.

The California Peach and Fig Association, after facing difficulties, is now firmly established, owing to the appreciated assistance rendered by the Federal Farm Board. The "Pacific Rural Press" in telling the story of this now successful co-operative enterprise, pays a tribute to the Federal Farm Board, as a relief to the many kicks the Board has received from some other quarters.

VICTORIAN DEPARTMENT OF AGRICULTURE.

Changes in Personnel.

Dr. S. S. Cameron, who has been Director of Agriculture in Victoria for many years, is due to retire on June 30 next. Dr. Cameron has ably fulfilled his duties and has rendered services of great value to this State.

Congratulations to Mr. Robert Crowe (Superintendent of Exports), who has been appointed Director of Agriculture for a year—the balance of his term in the public service.

PRESENCE OF MIND.

There was a panic when the launch began to sink, and, although there were plenty of rescue boats, the females on board fought fiercely to get into the first boat to carry off passengers. There was serious danger of it capsizing until Bill, the deckhand, had a brain wave.

"Steady there," he roared. "No hurry! Stand back, you young ladies, until all the old ones get off."

As if by magic, the panic ceased. All the women stood back and soon they had to be coaxed in.

Success is progressive. Great things come naturally, and only to those who have done small things well.

* * * *

What is forbearance but the spirit of tolerance shown when a man who knows patiently listens to a man who doesn't?

* * * * *

The man who tries to get something for nothing usually gets nothing.

F. CHILTON
ESTABLISHED 1894
FRUIT COMMISSION AGENT
Licensed under Farm Produce Agents Act
Highest Market Prices — Prompt Returns — Reliable Advice
Registered Address for Telegrams and Cables, "CHILTONS"
References :— Bank of N.S.W., Haymarket, Sydney and Growers throughout Australia
CITY FRUIT MARKETS, SYDNEY

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

NEW SOUTH WALES.

Sydney:
Chilton, F., City Fruit Markets.

VICTORIA.

Melbourne:
Cave, F., & Co., Melbourne.
Davis, J., Pty. Ltd., Wholesale Fruit Market.
Millis, A., & Sons, Wholesale Fruit Market.
Lister, G., Wholesale Fruit Market.
McLean, N. N., Pty. Ltd.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Wholesale Fruit Market.
Renouf, R., Wholesale Fruit Market.
Ross, J. W., Wholesale Fruit Market.
Silbert, Sharp & Davies, Wholesale Fruit Market.
Stott & Son, T., Wholesale Fruit Market.
Tim Young & Co. Pty. Ltd., Wholesale Fruit Market.
Vear, F. W., 49 William Street.
Wilson, H., Wholesale Fruit Market.
Woolf, G., Wholesale Fruit Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Wholesale Fruit Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., Temple Place, Macquarie Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

GREAT BRITAIN.

London:
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
The Port of Hull, London and N.E. Railway. Rep., Burns, Philp & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
Johnson, T. S., & Co.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Astheimer, P. H., & Son, Fruchthof.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof. Reps., J. B. Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.

AUSTRALIAN PEARS IN LONDON.

Early Arrivals Overlap and Bring Low Prices.

Messrs. M. Isaacs & Sons Ltd., London Fruit Exchange, Spitalfields, London, report as follows on March 26:—The London market opened weak for Australian Pears. In addition to American Pears, heavy supplies came from the Cape and the Argentine. The two latter overlap the Australians.

Australian W.B.C., ex "Jervis Bay," were of excellent flavor, but buyers have not confidence in their keeping qualities. Market inundated with other Pears. Prices: S. Aust. (trays), 2/6, 3/6; Vic. W.B.C., 10/-, 11/-; Clapp's Fav., 10/3, 13/6.

"Largs Bay."—generally satisfactory. Vic. Williams (in Canadian bushels) 12/-, 14/3, flat cases 7/-, 11/-; Howells, 8/-, 10/-; Anjou, 10/3, 13/-; Bosc, 10/-, 12/6; Williams, trays, 3/-, 4/-.

"Naldera."—Fruit rather advanced condition, some spotty; some S. Aust. trays in poor condition. Vic. Williams, flat boxes 7/-, 8/6; Howells, 7/-, 8/6; S. Aust. trays, 3/-, 3/9.

Messrs. Parnham Pty. Ltd., Melbourne, advise (7/5/31) cables from the White Service, London:—

"Oronsay."—Apples good demand. Pears, Bosc, 14/- to 16/3; Packhams, 14/- to 16/6; Anjou, 18/- to 18/6; Howells, 12/- to 12/6.

"Barrabool."—Bosc, 17/- to 18/3. Apples good demand, dessert slightly easier, "Banffshire," "Barrabool," Vic. Jon. 9/- to 11/6, Cleos. 10/- to 12/3.

Williams Pears ex "Largs Bay," affected with black spot. Under the date March 26, Messrs. White & Son advise that the market has been well supplied with Pears from the Pacific Coast of the United States, and to a lesser extent from the Argentine.

A further cable from the White Service, dated May 13, was as follows:—Pears, active demand, "Cathay," "Orama," Bosc, 15/- to 20/-; Packhams, 16/- to 17/3; Jos., 16/- to 18/-; Keiffer, 12/- to 15/3; Howell, 12/- to 15/6. Apples, good demand, shade easier; Vic. Jon., 9/- to 10/6; Romes, 9/6 to 11/-; Dunns, 10/- to 12/9; Cleos., 12/- to 12/6.

Major H. Dakin, of Sydney, Australian agent for Geo. Monro Ltd., of London, Liverpool, etc., reports having received a cable on May 18 as follows:—

Demand for Pears fairly good. "Orama," "Cathay," "Balranald," "Kent" generally satisfactory condition. Apples: Cox, 13/- to 18/-; Cleos., 10/6 to 11/6; Jon., 10/- to 12/-; Alf, 11/6 to 13/-; Ribstons, 10/- to 11/-; Del., 10/- to 11/-; R.B., 9/- to 12/-; G.S. (N.S.W.), 17/- to 18/-; Cleos. (N.S.W.), 11/- to 13/-. Some Victorian Jons. from "Barrabool" landed wasty; 9/- to 10/-. Some N.S.W. Cox's, half-cases, from "Barrabool" landed wasty, 3/- to 5/-. Some N.S.W. Jons. from "Barrabool" landed very wasty, 5/- to 10/-. "Cathay" Pears: Comice, trays, 9/- to 10/-; B. Bosc, 4/6 to 5/-; W. Cole, 4/6 to 5/-; Howells, cases, 14/- to 15/-; B. Bosc, cases, 16/- to 18/-; some very ripe, 8/-; N.S.W. B. Bosc, trays, 5/6 to 8/-; W. Cole, 4/9 to 5/9; Barry, 4/- to 5/-; Keiffers, 3/6; W.N., 6/-. "Cathay": N.S.W. Comice, trays, 12/- to 14/-; Packhams, 6/- to 10/6; many over-ripe, 4/-; B. Bosc, half-cases, 6/-; over-ripe and wasty. Victorian Winter Cole, cases, 13/- to 16/-; B. Bosc, 18/- to 20/-.

NEW SOUTH WALES.

Sydney (29/5/31).—Apples, local, eating, Del., 7/- to 9/-; R.B., 5/- to 7/-; Jons., 4/- to 8/-; Five Crowns, 7/-; jam, 2/-; Tas. Jons., Del., Cleos. and Scarlets, 5/- to 7/-; Five Crowns and Alf., 4/- to 6/-; other vars., 3/- to 6/- per bus. Bananas (genuine grades), nines 19/- to

20/-, eights 16/- to 18/-, sevens 12/- to 15/-, sixes 7/- to 12/- per case.

Citrus Fruits.—Lemons, local, choice 5/- to 6/-, medium 3/- to 4/-, small or inferior 2/-, irrigation 5/- to 7/-; Oranges 2/6 to 4/6, Navels 4/- to 6/-, irrigation 5/- to 7/-; Mandarins, Emperors 3/- to 6/-, Thornies 3/- to 9/- per bush. case; Guavas, 3/- to 4/- per half bush.; Passionfruit, local 2/6 to 6/-, few 7/- per half bush.; Papaws, 8/- to 12/- per case; Pears, local, Packhams, 6/- to 9/-, few 10/-; W.C., 4/- to 9/6; cooking, 3/- to 5/-; Tas. Winter Coles, 3/- to 9/-; Winter Nelis, 4/- to 8/-; other vars., 2/- to 6/- per bush.; Pineapples, Queens, green, 9/- to 12/-; colored to 15/- per case; Tomatoes, local, 2/- to 9/-, choice 10/- to 12/-; Bowen, 5/- to 11/- per half bush.

VICTORIA.

Melbourne (29/5/31).—The following prices are supplied by the Wholesale Fruit Merchants' Association of Victoria:—Apples, best eating and cooking, to 6/-; few specials, 7/-. Bananas, Queensland, green, 9's and 8's, 17/- to 28/-; 7's, 13/- to 16/-; 6's, 10/- to 12/- double case; selected lines for country trade higher; rust affected lines lower; Grapes, to 11/-; Grapefruit, 7/- to 8/-, few specials higher; Lemons, 3/- to 5/-; Oranges, Common, 4/6 to 6/-; Navel Oranges, 5/- to 8/-, specials to 9/-; Mandarins, 7/- to 9/-; Pineapples, best counts, to 15/-; others, 10/- to 14/- double case; Papaws, 8/- to 12/-; Passionfruit, 4/- to 8/-.

The Melbourne manager of the Federal Citrus Council of Australia reports as follows for yesterday's citrus market that sales were as follow:—Good average standard, Victorian and M.I.A. Navel Oranges, to 7/-, best counts; some selected lines to 9/- and 10/-, best counts; a few higher, Lemons, good standards, 160-225, 5/- and 6/-; small not in demand. Grapefruit, 7/- to 11/-, according to size and variety. Mandarins, best sizes, 9/- to 11/-. Common Oranges, 5/- to 7/-.

QUEENSLAND.

Brisbane (29/5/31).—Tas. Apples, Jons., choice 7/- to 8/-, others from 3/- to 6/-; A.R.O., special 5/- to 7/-, others from 3/- to 5/-; N.Y.P., 7/- to 8/-; G.F., 8/-; T.P., 8/-; A.P.M., 5/- to 7/-; S.P.M., 6/- to 8/- per case; F.C., 7/-. Tas. Pears, W.C., 2¼ in. to 2½ in., firm 9/- to 11/- per case; ripe, 2 in. to 2⅛ in., 5/6 to 7/-; G.S., 7/6 to 8/-; W.N., 8/- to 11/-; Duchess, 6/- to 8/6; Jos., 10/- to 11/-; B.D., 6/- to 7/- per case. For Granny Smith Apples from the Stanthorpe district in green condition, from 8/- to 10/- per case ruled, and for large size in colored condition, the ruling rate was from 6/- to 8/- per case. For Queensland Navel Oranges the ruling rate was from 6/- to 7/6 per case, special Navels 9/- per case. Extra choice Queensland Oranges from 4/- to 6/-, inferior 2/- to 4/- per case. Queensland Mandarins, Scarlets, special 14/- per case, others from 5/- to 10/-; Glens, 7/- to 10/-; Emperors, 5/- to 7/-; Feutrels, 4/- to 6/-; Thorney, 3/- to 6/-; Ellendale, 4/- to 6/-; Special Custard Apples up to 4/- per case; Papaws, 2/- to 3/6 per case; Pines, smooth, best quality, 5/- to 7/-; Ripleys, 2/- to 5/-, inferior 4/6 per case. Victorian Apples, Jons., 3/- to 8/-; Bunc., 8/- to 8/6; F.C., 7/- to 9/-; Victorian Pears, W.C., 2¼ in. to 2⅜ in., 8/- to 10/- per case, 2⅛ in. 7/- to 8/-; Keiffers 6/- to 7/-; Howells 5/- to 8/-; B.D.C., 5/- to 7/-; R.P., 5/- to 7/- per case; local Lemons, 2/- to 4/- per half case; Grapefruit, 2/6 to 3/- bush. case; Passionfruit, best 4/- to 6/6; second grade, 2/6 to 3/- per case.

WEST AUSTRALIA.

Perth (22/5/31).—Apples, Jon., flats 3/6 to 6/-, dumps 5/- to 11/- (special to 13/-, others from 3/-); Dunn's, 3/- to 5/6, 3/- to 8/-; R.B., 3/- to 6/-, 5/- to 8/-; Yates, 2/6 to 6/-, 5/- to 10/6 (inferior from 3/-); G.S., 3/- to 6/-, 5/- to 10/6; Cleo., 3/- to 6/6, 5/- to 9/- (inferior from 3/-); Doherty, 2/- to 5/6, 4/- to 8/-; other varieties, flats and dumps, 2/- to 7/-; Citrus: Oranges, Navels, flats 2/6 to 6/-, dumps 4/- to 8/6; Lemons, flats 3/- to 6/- (special to 7/-); Mandarins, 8/- to 14/-; Pears, all varieties, flats 2/6 to 5/6, dumps 4/- to 9/-; Tomatoes 3/- to 7/- (special to 8/6, inferior from 1/-).

SOUTH AUSTRALIA.

Adelaide (29/5/31).—Apples (eating), 8/- to 10/- case; do. (cooking), 7/- to 9/-; Bananas (Queensland), 24/- to 26/- case; Grapes (dark), 10/-; Passionfruit, 24/- to 28/- case; Pears (eating), 9/- case; Persimmons, 6/-; Quinces, 4/- to 5/- per case.

RETAIL FRUITERERS' ASSOCIATION.

The monthly meeting of the Executive of the Melbourne and Metropolitan Fruiterers' Association was held on May 7: there was a good attendance of delegates. Considerable discussion took place in reference to this Association accepting an invitation to affiliate with the Victorian Fruit Council, and it was finally decided not to affiliate at present, but to wish the Council every success and prosperity.

Delegates expressed their disapproval again at the inaction of the Agricultural Department in not enforcing the regulations regarding goods sold wholesale by weight at the Victoria Market. Echuca Beans were very often 7 to 9 lbs. short of the weight supposed to be in the bags, and yet there did not appear to be much action being taken by the Department to improve matters. One of the City Council officers, however, stepped in to try to stop this fraudulent practice, and one offender has, at the instance of this official, been fined £3 for selling Peas light weight, the deficiency being 27 lbs. in 300. A few more such prosecutions would probably have good results.

FRUIT TREES

ONE GROWER SAYS—

"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

2282 EGGS
from 12 fowls in 9 Months

"We have found Karswood to be absolutely everything that is claimed by its Manufacturers!"

That is high praise, but if you read Mrs. Marchant's letter below, from which the extract is taken, you will see that it is richly deserved. Nearly every line in that letter gives a fresh reason why you, too, should feed Karswood to your fowls. Here are some of her telling points: (1) Twelve fowls, each six years old, give an average of 7 eggs a day. (2) The spice keeps the birds in splendid condition. (3) It is very helpful to them during the moult. Buy a packet to-day and prove all this for yourself.

Dear Sir,

I have been using Karswood Spice for a period of four years. Our fowls are now six years old, and last year we had an aggregate of 2,282 eggs from 12 fowls ending the nine months—an average of 7 eggs a day. The Spice keeps the birds in such splendid condition and is very helpful to them during the moult. They are at present looking very well and red and I think they will again shortly be laying, so you see people tell you that fowls do not lay after 3 or 4 years old, but we have this good proof which should be proof enough. We have found Karswood to be absolutely everything that is claimed for it by the manufacturers and we are more than pleased to strongly recommend it to all our friends and everyone who keeps fowls. Trusting you will use this letter as you wish.

Gratefully yours,

(Sgd.) MRS. J. A. MARCHANT, Lagoon St.,
23/6/29 Narrabeen.

Dear Sir,

I have been using Karswood Spice for several years, with excellent results. I have only 8 fowls, but have been getting on an average 6 and 7 eggs a day for some time, which is satisfactory, don't you think?

(Sgd.) VICTOR POWELL, 54 Shipsters Road,
5/5/29 Kensington, S.A.

Supplies.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½lb. packet, 1/-; 1lb. packet, 2/-; 7lb. tin, 13/-; 14lb. tin, 25/-; 28lb. tin, 48/-.

KARSWOOD
POULTRY SPICE

Increases Egg-production Without Forcing.

Poultry Notes

DISCUSSING the care of breeding stock, the N.S.W. Poultry Expert presents a few reminders particularly worth noting by the many recent newcomers to the poultry industry.

* * * * *

The obtaining of such stock from which to hatch and rear one's own chickens, it is stated, is the soundest method of making a start, and those in this position should not delay any longer securing their requirements.

* * * * *

This is necessary to allow them to become accustomed to their new surroundings and come on to lay in time to commence incubation early in June.

* * * * *

It is desirable that the male birds should be placed in the pens a week or so before it is intended to save eggs for incubation.

* * * * *

Although in most cases the eggs should be fertile after the birds have been mated four or five days, early in the season the fertility may not be satisfactory in so short a period.

* * * * *

In cases where the breeding stock is being selected from the home flock, the birds should be in the pens ready for a final picking over, which is always necessary to ensure evenly balanced pens.

* * * * *

Some of the hens which are not properly through the moult may not, of course, be in good enough condition for a final selection, but these can be dealt with later.

* * * * *

One question which is frequently asked is whether it is advisable to mate pullets and cockerels, and while this question can be answered in the affirmative, some qualification is needed because it is essential that both cockerels and pullets be at least ten months old, and well developed.

* * * * *

On most farms it is necessary to use pullets and cockerels to obtain eggs for hatching early in the season because usually the hens do not come on to lay early enough to produce early chicks, and frequently the second year males are not in good enough condition at the beginning of the season to ensure satisfactory fertility.

* * * * *

The feeding of the breeding stock has an important bearing upon results, and if they are given a high percentage of concentrates in the ration, poor hatches may be expected.

* * * * *

Breeders, therefore, should be given only about 5 per cent. of meat meal, having a protein content of around 60 per cent., and if they have been receiving more, should be reduced to that amount in the ration at least a month or so before the breeding season.

The use of maize in the evening feed to the extent of one-third, or up to two-thirds if the price is comparable with wheat, is also beneficial for the breeders.

* * * * *

Green food should be supplied daily, especially where there is no grass on the runs.

* * * * *

The birds should be given as much as they will eat of mash in the mornings and of grain in the evenings, but not so much as to have food left an hour after feeding.

* * * * *

It often happens that the male bird allows the hens to eat up the food and does not get sufficient for himself, and consequently he becomes poor.

* * * * *

When this occurs it is common to see the male rush ravenously for the food, and it is thought that he is becoming too greedy, but this is a sure sign that he is being starved.

* * * * *

The best way to avoid such a happening is to give the male bird a feed of whole maize at midday.

* * * * *

This can be done by shutting the hens in the house and giving the male a handful of food in the yard.

* * * * *

It is a wise plan to handle the "head of the pen" every week or so during the breeding season to make sure that he is keeping in good condition, because neither good hatches nor strong chicks can be expected from poor males.

FEEDING RATIONS.

Questions:

"Amateur" (Shepparton), writes:

Could you please let me have a good reliable feeding table for laying hens (White Leghorns and Black Orpingtons), through the medium of your journal—also one for chickens? At present I am feeding the layers on a mash of 15 parts pollard, 5 parts bran, 2 parts wheat, 1 part meat-meal, and about 8 fairly large onions finely chopped for the morning, with greens at midday and wheat in the evening for about 190 birds. Also, what are the correct quantities per bird to feed?

Answers:

You do not state whether you are feeding wet or dry mash, or whether it is giving good results or not. If the mash you are feeding is proving satisfactory, it would be unwise to change it. On the other hand a well-balanced and probably more economical mash for laying stock could be made up by using three parts wheaten pollard, 2 parts bran, ½ part oaten pollard, with minced cooked meat added at the rate of ½ oz. per bird three times a week. Greens at midday and a grain ration of 3 parts wheat, 1 part oats and ½ part maize, fed at night. All parts by measure. If a wet mash is desired, the same proportions could be used and the mash mixed with soup made from bullocks' heads and livers and adding 20 per cent. of chaffed green stuff. If meat is not available for the soup, use meat-meal at the rate of 7½ to every 100 lbs. of dry meal. In the case of a wet mash, the soup or meat meal of course takes the place of the minced cooked meat mentioned in the dry mash. In the grain ration, a little over 2 ozs. daily should be allowed for each bird.

A good dry mash for chickens after they are five days old, can be made of the following:—5 parts bran, 5 parts pollard, fine oat meal, 5 parts, and 5 parts ground up maize. To this dry mixture add 10 per cent. of dried milk and 2 or 3 per cent. of fine bone-meal. All the quantities mentioned are by weight.

GET READY FOR NEXT SEASON.

(By J. B. Merrett.)

No industry has a brighter future in Australia than the poultry industry. Feeds are cheap, the world wants our eggs, and the exchange is in our favor. Let me urge on every producer during the coming season to hatch every possible bird. It will pay to double up production. Prices will not go to the high level of years 1923-27, but mass production will bring its reward. The export season can be lengthened, the pulp industry can be developed, and other markets than Great Britain await our eggs. Poultrymen, have confidence in your industry! Let Australia make a name for herself in the magnitude of the poultry industry. Lets pull together—our chance has come.

DUCK QUERIES.

Questions:

"M.B.," Launceston, Tas., writes:—

(1) What space should be allowed per bird in single testing ducks, and what floor should be used? Would asphalt or cement be too severe on the feet? What is the best way to fix drinking water so that it will not make a mess?

(2) How does Aylesbury compare with Muscovy for business proposition as table bird? What is the most profitable age to kill Aylesbury and what should they weigh dressed?

(3) What is the easiest and quickest way to pluck a duck, and how are leg sinews removed?

Answers:

Ques. 1.—Build a long shelter, height in front 2ft. 6in., back 2ft., depth 2ft. 6in. Divide into compartments 2ft. wide. Asphalt or concrete the interior a few inches above ground level. Dry bedding should be used, and in wet weather will require frequent renewals. Wired-in runs, 2ft. 6in. high, and not less than 10ft. in length, should be provided for each compartment. Doors and gates are unnecessary. If possible, choose a site where the ground slopes away from shelter. A receptacle containing grit should be placed inside the shelter and the water vessel outside the wire at the further end of the run. Provide exercise for the duck and minimise waste by feeding mash at the shelter end of the run.

(2) In Australia, the demand for Muscovies far exceeds that of the Aylesbury or Pekin. A continuous supply of ducklings can be secured with Muscovies, whereas with other table ducks, the profitable hatching period is limited to approximately 5 or 6 months. Muscovies require a smaller capital outlay, as incubators and brooders are unnecessary. Aylesburys are ready for killing at 10 to 12 weeks, and good utility stock should average 5 lbs. when dressed.

(3) For home consumption, scald duck whilst warm in 2 parts boiling and 1 part cold water. The addition of soda will make scald more effective. The feathers should then rub off easily. It is not necessary to remove the leg sinews.

(Answers by Mr. Frank Gilbert, Noble Park, Victoria.)

The tact to handle difficult situations fairly and acceptably, because of your known fairness and good judgment, is a valuable asset for any man to possess.

UNIONISM.

The teacher was giving the class a lesson in mathematics. All the pupils lived in an industrial suburb.

"If six men work for 17 hours a day for seven days in one week what would that make??" she asked.

"A strike, miss," they all replied.

QUEENSLAND BANANAS.

The proposed acquisition of the Bananas grown in Queensland by the Committee of Direction of Fruit Marketing, and the attempt by the C.O.D. to establish its own selling floor in Melbourne, are being contested by the Melbourne Banana Agents & Merchants' Association.

There is active propaganda on both sides.

Briefly, the C.O.D. state that even if they do establish their selling floor in Melbourne, they will still need the services of agents for the large quantities which come to hand from the Northern State. A system of accredited agents is proposed.

On the other hand the Melbourne agents point out the danger of a monopoly, and state that growers are getting good service under the present regime. In fact, every reputable firm is willing to assist the C.O.D. in its work on behalf of growers. There should be no antagonism and working at cross purposes. Further, Queensland growers should also bear in mind that large supplies are coming forward from N.S.W., and that the trade channels should be kept clear as buyers would resent a monopoly.

QUEENSLAND FRUIT IN MELBOURNE.

The Melbourne representative of the Committee of Direction of Fruit Marketing (Mr. C. G. Parnell) advises as follows:—

The total tonnage of Queensland fruit which arrived in Melbourne during May was 1,887 tons, comprising Cavendish, Sugar, Ladyfinger and Gros Michael Bananas, Pineapples, Jaffa and Sabina Oranges, Emperor and Beauty of Glen Retreat Mandarins, Monstera deliciosa, Papaws, Custard Apples, Grapefruit, Tomatoes, Rosellas, Passion Fruit.

For most of the month Banana prices were reasonably high, but at the end of the month values had fallen considerably—in some instances up to 4/- per case.

The values indicated by press reports are for clean fruit only, and the fruit which is affected with the rust trouble is realising prices considerably lower in each grade.

It is to be expected and hoped that the growers who consider they have a cure for the rust trouble will make every effort to establish this cure and improve the Banana industry to the extent of thousands of pounds per year.

Pineapples.—The supply of Pineapples has fallen off during the month, and values have improved accordingly.

Early in the month the Pineapples were affected with "blister," which is not the same as "water blister," and affected only very ripe Pineapples, but had interfered with the sale of this fruit to the same extent as the "water blister" trouble.

Oranges.—Due to the supply of local and South Australian Oranges, the Queensland product has suffered by comparison, values declining almost daily, and the demand at the present time is very weak, due to the number of navel Oranges being sold at cheap rates.

The Mandarin position is somewhat better, as the Queensland product is superior to local and interstate supplies, but as the demand has weakened throughout the month, sales at the end of the month are lower than previously. The majority of the supplies have been Emperor Mandarins, and there have been a few samples of very fine Glen Retreat Mandarins.

The supply of Papaws has reached the stage where the market is over-supplied, and although cases of choice fruit are sold at reasonably high rates, there will be a number of cases which will not realise the quoted prices due to deteriorating whilst held in the stores for sale.

Owing to the frosts being experienced in the local districts, it is now considered that the time has arrived for Beans to come forward from Queensland, and fresh and good Beans should realise payable prices.

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"Fruit World Annual"

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"The Fruit World," Box 1944
G.P.O., Melbourne.

Queensland.

(By Our Correspondent.)

THE vagaries of the Queensland seasons have been much in evidence this year, a decidedly dry spring and early summer being followed by heavy intermittent summer rains, which have prevailed right through the autumn rather to the detriment of coastal fruit, and also impeding orchard work. As a set-off, some benefit is derived in respect of the conditions being most favorable to the development of parasitic fungi, which effects almost a general clean-up of scale insects, particularly on citrus trees. On the other hand, the development of moulds is encouraged, though up to the present the losses from this cause have been very light.

Citrus Maturity Standards.

The questions of maturity and other standards for Oranges have not given local growers much concern, as they consider that they can very reasonably comply—except in natural color—with any conditions which may be made applicable to the Southern fruit. Juice content has been discussed, and though no recommendation has been made, it is understood that raising this to 33 1-3 per cent. is generally favored.

Regarding the

nomenclature of Oranges

for markets other than our own, resentment has been expressed at the limited range, and as our best quality fruit consists of Joppa, Sabina, and Byfield Seedless (which may be classed as a seedless Valencia), which could not reasonably be designated "common," such resentment is not altogether unfounded. Seedless Oranges of Queensland origin have been noted in the "Fruit World," and quite recently an excellent seedless Mandarin, otherwise typically a Scarlet, has been brought under notice from the Charleville district.

The local markets are liberally supplied with clean, well-grown Oranges and Mandarins, but their appearance has not been improved by a few growers in attempts at artificial coloring, which is a very poor subterfuge with which to attempt to cloak immaturity.

Regarding a maturity standard, it is recognised that the present acidity measure is unsatisfactory, and the matter was discussed between citrus growers and the agricultural chemist, but the data available from numer-

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ous tests was not considered sufficiently complete as to form the basis of a definite suggestion, consequently it was deferred for further investigation, the representatives of growers agreeing to submit at regular intervals throughout the season samples of fruit from the same trees of each variety.

It is unlikely that the area under citrus will be much extended this year, the prevailing depression having an all-round influence, though it may be mentioned that enquiries for small blocks of land suitable for fruit farms are fairly numerous.

In an endeavor to protect the planter of fruit trees generally, standards for nursery stock have been provided, for, though it was recognised that the principal nurseries sent out only first-class material, this did not apply to some of the small establishments, nor wholly to interstate supplies.

The deciduous fruit season finished up well, and it is a pleasure to note that the annual improvement in the general quality and comparative freedom from disease has been maintained. Inferior lines were almost entirely absent, and the presence of fruit fly extremely rare.

The prospect for the **winter crop of Pineapples** is not encouraging. The canners can only handle a limited quantity at a reduced rate, consequently the fresh fruit markets will be called upon to endeavor to absorb fully double the usual supply. A large quantity of canned Pines is still on hand, and sales are slow. The cost of production exercises the most important influence, and until this can be reduced by improving the constitution, productiveness, and adaptability of the plant, is unlikely to be affected. Rumor conveys the discouraging report that the **tropical experiment station** is to be closed down at the end of the year owing to financial stringency. If this should prove correct it will mean the indefinite postponement of legitimate effort to establish a profitable tropical fruit industry, and be a severe set-back to both the Pineapple and Banana branches.

Field operations are rather backward on coast land, owing to excessive moisture, and there is little being attempted beyond fruit marketing incidentals. The growth, particularly of young trees, though somewhat restricted during spring, has since been phenomenal, and on account of mild humid conditions extended much later into the year than usual. In the temperate zone variations have not been so pronounced, and general cleaning of orchards is well forward.

The benefits derived from green manuring in this district are being more fully appreciated, field peas being most in demand for the purpose, and many orchards under this group now present a verdant appearance.

Working-over inferior varieties is fairly general, and very satisfactory results are already apparent.

Strap-grafting is practically the only method applied, and Mr. Pratt, the local instructor, has given this very

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careful attention, and by a modification of the original method of cutting the scion, adjusts it to varied angles from the stock with advantage. In cases where it is desirable, the subsequent growth may be diverted from the direction of the branch treated.

On the markets good supplies of southern Apples and Pears are evidenced, which compare favorably with those of last year. Owing to the absence of "black spot" in this State, except on introduced fruit, it may be expected that a fairly close scrutiny will be maintained so that the possibility of its presence will be at least minimised.

Good Natured.

The bargaining for the cow had been going on leisurely for an hour. Finally the prospective purchaser came flatly to the point. "How much milk does she give?" he asked. "I don't rightly know," answered the farmer who owned her, "but she's a darn good-natured critter, and she'll give all she can."

TRISTANIA CONFERTA (BRISBANE BOX TREE).

Tristania conferta, the Brisbane Box or Scrub Box, is very common in the neighborhood of Brisbane, and when planted making an ideal shade tree. It is largely planted in the Southern States as a shade and street tree, particularly in Sydney suburbs, where it is mostly grown under the name of Lophostemon australe.

The practice there is when the trees attain a fair height to lop them off about six feet from the ground, causing them to produce a fine umbrageous head. We do not think seeds are stocked by Brisbane nurserymen, but most of the Southern nurserymen list plants in their catalogues, either under the name of Tristania or Lophostemon. The plant, however, seeds very heavily.

If you wish to raise plants, gather some of the seed capsules, lay them out on a sheet of paper for several days, and they will shed the seed. This can then be sown in flats or a garden bed, the young seedlings when a few inches high pricked off into pots and tins, and then planted out when large enough in their permanent positions.—"Queensland Agricultural Journal."

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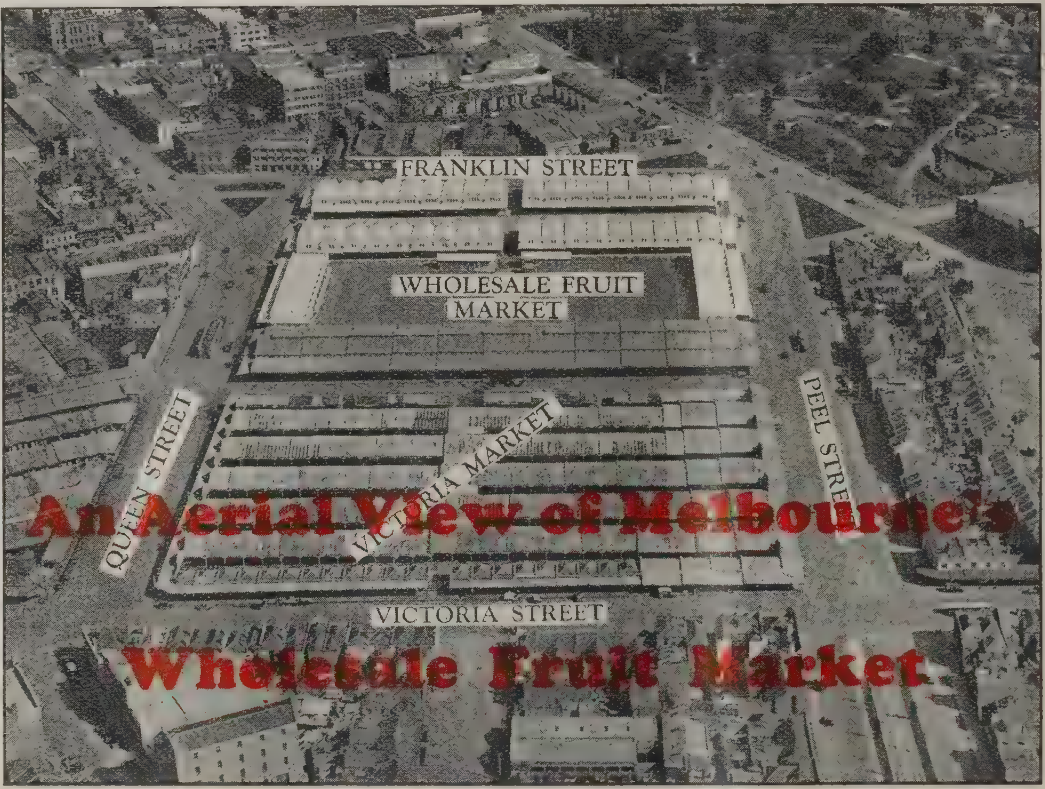

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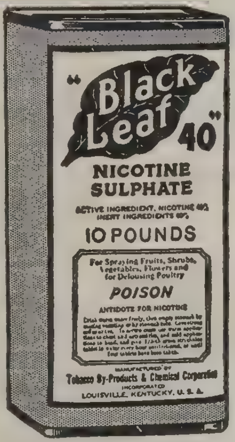
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CITRUS EXPORT.

Shipments to New Zealand, China and England.

Mr. J. A. Parkes, Manager Victorian Central Citrus Association, is actively endeavoring to arrange for the additional export of citrus fruit.

Shipments to New Zealand are in progress. up to the end of June, about 14,000 cases have been sent. It is expected that between 70,000 and 80,000 cases will be sent to the South Island this season from Victoria and Australia: shipments to the North Island are sent from Sydney. Certain quantities find their way from the North Island to the South Island, and this to some extent complicates the stabilisation of prices. The Federal Citrus Council has given much time and thought to the full development of the N.Z. trade, and is now in a position to guarantee continuity of supplies, thus enabling traders in N.Z. to dispense with their Californian imports. Citrus fruit is sent from Australia to the Dominion as ordinary cargo: no refrigeration being needed.

Export markets to Montreal and Eastern Canada are being developed, the route being via the Panama Canal. Shipments from N.S.W. are going direct to Vancouver.

A trade with China is also being worked up. Recently a consignment of 356 cases went forward, 210 to Hong Kong and 246 to Shanghai—the fruit intended for Shanghai being kept in the cool chambers of the Hong Kong boat till the connecting Shanghai steamer arrived.

A further shipment of 2,000 cases has been booked for the July boat.

The Citrus Association is prepared to send consignments to England. It is hoped that any existing difficulties will be removed. The question of the "citrus taint" has been raised as affecting other foodstuffs in the cargo, but by having separate holds this problem may be solved.

How Foliage Affects Fruit Crops.

The Relation of Foliage to Fruit Size and Quality in Apples and Pears.

Hints to be Borne in Mind During the Present Pruning Season.

THE RELATION OF FOLIAGE to the size and quality in Apples and Pears forms the subject of a very interesting Bulletin just to hand from the Agricultural Experiment Station, Pullman, Washington, U.S.A. This Bulletin is signed by the investigators, Messrs. J. R. Magness, F. L. Overley, and W. A. Luce.

* * *

We submitted this Bulletin to a well-known grower, Mr. T. G. Tyler, of Somerville, who, after perusal, writes as follows—

I thank you very much indeed for the Bulletin re "Foliage." I have been working along this line for about 8 years now, and I am quite sure that it would be a good thing for the "Fruit World" to publish.

Of course, as you know, the question of "foliage" is only one factor in our efforts to produce large, regular crops of good fruit.

In endeavoring to put this system into practice, it should be clearly understood that "increased foliage" does not mean "density of foliage."

There is also the question of "sufficient soil moisture."

Certain it is that many systems of pruning now in operation have had a tendency towards defoliation, which is injurious to the tree and lessens the crop.

* * *

We now republish this interesting Bulletin as follows:—

THE LEAVES OF THE TREE play the most important part in the processes of food building, on which the growth and development of fruits depend. The leaf is to a large extent the manufacturing establishment in which the raw materials coming from the air and the soil are changed into food materials from which the fruit and new wood tissues are built. The average Apple contains approximately 85 per cent. by weight of water, the other 15 per cent. consisting largely of sugars, organic fibre or cellulose materials, pectin or jelly forming materials, organic acids, and a very small percentage of mineral matter. Almost all of these materials which make up the fruit, aside from water, are manufactured in the leaves of the tree, or are built in the fruit itself from materials manufactured in the leaves. Thus the quantity of fruit which a tree can produce in any year depends largely on the amount of foliage carried on that tree and the efficiency with which that foliage functions.

The Function of Leaves in Fruit Production.

The leaf, when examined microscopically, is rather a complex structure. Great numbers of small pores or stomata are distributed over the lower surfaces of the leaves of Apples and Pears. On the leaves of many plants stomata are found on the upper surface as well, but in Apples they apparently are confined to the lower surface. These stomata have the power of closing and opening. In Apples they are closed during the night. Under the influence of light they open shortly after daylight in the morning and remain open until dark so long as the water supply to the leaf keeps the tissues in a completely turgid condition. With appreciable loss of water from the leaf, however, the stomata close, even though the leaf may show no physical evidence of wilting. Generally, during warm dry days the stomata in Apple leaves close about noon, even with an abundance of moisture in the soil. On cloudy humid days a considerable portion of the stomata will remain open all day if there is an abundance of soil moisture. On the other hand, with reduced soil moisture, apparently the moisture deficiency of foliage occurs earlier in the day and stomatal closing occurs increasingly earlier as most of the root zone becomes dry.

The functioning of the leaves apparently is dependent largely upon the opening of the stomata. When the stomata are open carbon dioxide from the air passes freely into the leaf. There it comes into contact with water and soil solutions brought up from the roots. In the presence of sunlight and the green pigment, chlorophyl, this carbon dioxide and water are combined in the leaf to form simple sugars. These sugars are then built up into more complex sugars, and are either carried from the leaf to different parts of the plant or stored temporarily in the form of starch in the leaves. This process of manufacture of sugar and other carbohydrates in the leaves is the fundamental process on which plant growth depends.

The amount of food material which will be formed in the leaf depends upon a number of factors. First,

carbon dioxide enters freely

only when the stomata are open or partly open. Closing of the stomata as a result of a lack of soil moisture prevents the entrance of carbon dioxide into the leaf and prevents food manufacture. With sufficient moisture the amount of food which will be formed depends largely on the area of healthy leaf surface. With most plants the food manufactured is limited by the amount of carbon dioxide absorbed. This varies directly with the leaf surface which the tree carries and the length of time the stomata remain open.

In fruit trees the area of leaf surface varies greatly with the growth conditions in the tree. In an Apple or Pear tree, all of the leaves are borne on growth of the immediate season. If that growth is vigorous a great number of leaves and large size leaves will be formed. If that growth is weak the number and size of leaves are correspondingly reduced. For example, spurs making a growth from one-half to one inch per year will carry six to eight large well-developed leaves. Spurs making a growth of one-fourth inch, however, will generally carry not more than one-half this total leaf surface. Similarly, strongly growing terminals carry more leaves and larger leaves than terminals making weak growth. Consequently, the total leaf surface carried by a tree of any given size depends largely on the growth conditions of that particular tree.

The leaves manufacture not only the food materials which go to develop the fruit, but those which

build the wood growth

of the tree as well. In addition, food material must be stored in the tree each year to carry it through the winter and to initiate its growth the following spring. The opening of the blossoms in Apples and Pears and the expansion of the newly-formed leaves are dependent upon food stored in the tree. Consequently, it is necessary not only to have a leaf area in the tree sufficient to grow the fruit to good size and quality, but a surplus of food materials to promote the necessary wood growth and permit the storage of food materials to carry the tree through the dormant season and to start growth in the spring.

Investigations here reported were undertaken in an effort to obtain information on the relationship between leaf surface and function, and the amount of fruit that can be produced. It has long been recognised by fruitgrowers and has been demonstrated experimentally that thinning of the fruit increases the size of that remaining on the tree. In horticultural practice thinning recommendations have been based on certain distances for the fruit. Thus the recommendation has been to thin to six or to eight inches apart, these distances being those that experience has shown to be satisfactory to obtain adequate commercial size of fruit. In these investigations an effort has been made to obtain more definite information on the amount of foliage necessary to develop fruit to good commercial size and quality.

Methods of Procedure.

There is probably only limited transfer of the manufactured food materials from one side of a tree to the other side, but unpublished data indicate that there is a rather free movement along branches and within major branches. Consequently, in order to know definitely how much the foliage is contributing to the building of certain fruits, it is necessary to stop the movement of material in and out of particular branches under test. This was accomplished by removing a ring of bark one fourth to one-half inch wide from around the branches. Since these manufactured food materials apparently move entirely through the bark, this treatment prevents the movement of foods into or out of the branches.

Tests were started at the time the fruit had definitely set and after the June drop was nearly over (December in Australia). The Apples and Pears at the start of the test were from one-half to one inch in diameter. At that time two to four typical branches on two to six vigorously growing trees were selected and leaves or fruit removed until the desired ratio of leaves to fruit was obtained. Usually from 6 to 15 Apples were left on each branch under test with a sufficient number of well-developed leaves to give the desired ratio. Small, poorly developed and crinkled leaves were removed at the beginning of the test. The ring of bark was removed at the same time, and the wound covered with hand grafting wax to prevent drying out of the tissue. The individual Apples were tagged and numbered, and their circumference measured at intervals of approximately 15 days throughout the season. For the work on Apples, Delicious, Jonathan, Rome Beauty, and Winesap trees in a thrifty irrigated orchard near Wenatchee, were used.

For the work on Pears, Bartlett, Anjou, and Winter Nelis trees located in similar orchards near Wenatchee were used. Branches selected for the work with different leaf areas were selected from all sides of the trees. Two and three trees of each variety were used. Tests with each of the different ratios of leaves to fruit were made on each tree. Thus an attempt was made to avoid errors from difference in tree vigor or other variables.

The volume of the fruit in cubic centimeters, considering it as a sphere, was calculated from circumference measurements. The actual volume of the Apples was generally somewhat less than that so calculated, while the actual volume of the Pears was usually somewhat greater than the volume of the sphere of the same circumference. The results, however, are directly comparable.

At the end of the growing season fruit from each test was harvested, transported to the laboratory at Pullman, and analysed chemically to determine the effect of the varying leaf areas on the composition and quality of the fruit.

Presentation of Data.

Figures 1 to 4 inclusive show graphically the rate of growth of the Apple varieties with different leaf areas from the beginning of the tests until the end of the season. With

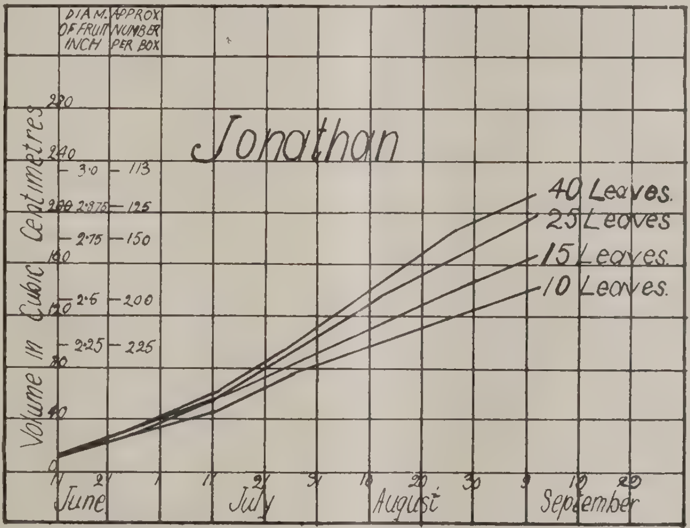

Fig. 1. Growth of Jonathan Apples on ringed branches with varying numbers of leaves per fruit, Wenatchee, Wash., 1929.

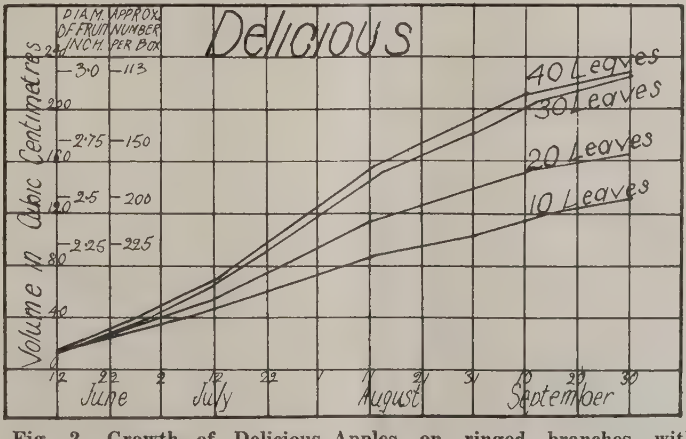

Fig. 2. Growth of Delicious Apples on ringed branches with varying numbers of leaves per fruit, Wenatchee, Wash., 1929.

Note.—Under southern hemisphere conditions the above months would read: December, January, February, and March.

Apples there was generally an immediate response in growth rate to the greater foliage area.

Under the conditions of these tests **the maximum growth rate** in the different varieties was attained in July and August. The rate of volume increase with nearly all varieties during June and early July was somewhat less rapid than during July and August. In some cases there was a slight decrease in the growth rate during late August and September as compared with the peak rate during late July and early August.

July, August and September in U.S.A. would compare with January, February and March in Australia.

A study of the graphs shows that, with 10 leaves per Apple, in no case did the fruit attain best commercial size for the variety. Jonathan, Winesap and Delicious Apples, for example, attained an average size of approximately 200 per box. Rome Beauty Apples, on the other hand, with 10 leaves per fruit, attained a size of approximately 150 per box. This greater growth in Rome Beauty perhaps results from the larger size of the Rome Beauty leaves, as will be mentioned later.

With 20 well-developed leaves per Apple, under irrigated conditions fruit of fairly good commercial size was obtained. Under this condition Rome Beauty averaged larger than 113 per box. Delicious and Winesap averaged 150 per box. Jonathan with 15 leaves averaged approximately 163 per box, while with 25 leaves, it averaged almost 125 per box.

All of the varieties under the conditions of these tests reached good commercial size with 30 leaves per fruit. Winesap, for example, averaged between 113 and 125 per box. Rome Beauty averaged approximately 90 per box, while Delicious averaged 125 per box. With 40 and 50 leaves fruit was generally somewhat larger than with 30, though in this test there was no significant difference in the case of Winesap.

A study of Figures 1 to 4 also shows that in general the greater the leaf area, the less the proportionate increase in size of fruit. For example, in Rome Beauty with 10 leaves per Apple they increased in volume during the season from slightly less than 40 cubic centimeters to 180 cubic centimeters or a gain of approximately 140 cubic centimeters. With 20 leaves per fruit the gain was from 30 cubic centimeters to 250 cubic centimeters, or a gain of 220 cubic centimeters. Thus the gain with 20 leaves was considerably less than double that from 10 leaves. With greater foliage areas the relative gain in size was correspondingly less.

In Table 1 the data for Apples are summarised. This table gives the number of leaves per fruit, the size of the fruit at the end of the season, the average leaf area for different varieties, and the chemical analyses of the fruit.

There was a considerable **variation in size of leaves** for the different varieties. Winesap leaves were the smallest of the four varieties studied, averaging slightly less than two and one-half square inches in area. Delicious averaged slightly less than three square inches, Jonathan approximately three and one-fourth square inches, while Rome Beauty averaged over four square inches per leaf. There was the same ratio in the size of fruit obtained from these different varieties with a given number of leaves. With 10 leaves, for instance, Winesap averaged 210 Apples per box, Delicious 200, Jonathan 188, and Rome Beauty 150. Similarly, with 30 leaves Winesap averaged about 127 fruits per box, Delicious 118, and Rome Beauty 92. Jonathan was not measured with 30 leaves, but would probably have been about the same as Delicious. The larger size

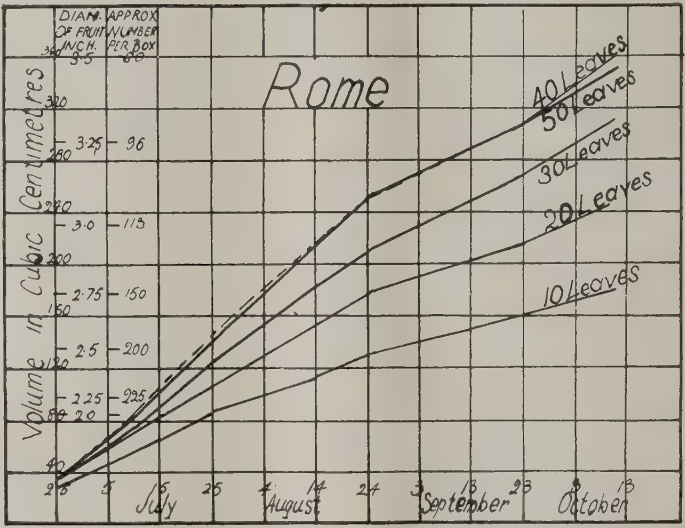

Fig. 3. Growth of Rome Beauty Apples on ringed branches with varying numbers of leaves per fruit, Wenatchee, Wash., 1929.

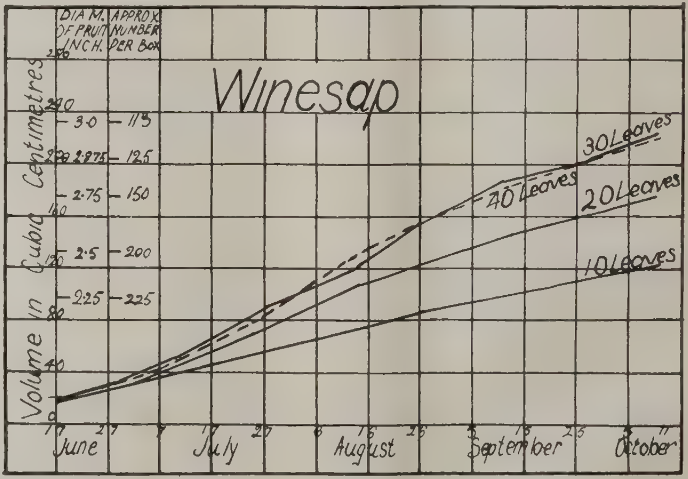

Fig. 4. Growth of Winesap Apples on ringed branches with varying numbers of leaves per fruit, Wenatchee, Wash., 1929.

Note.—Under southern hemisphere conditions, the months June, July August, September and October should read: December, January, February, March and April.

of Rome Beauty with a given number of leaves apparently resulted largely from the greater size of these leaves, rather than from inherent better functioning of the Rome Beauty foliage.

The chemical composition of the fruits with varying leaf areas is of particular interest.

The total sugar content was always less with fruit grown with 10 leaves than with a larger number of leaves and in most varieties increased as the leaf area increased. That is, the fruit grown with the larger leaf surface was not only of greater size, but also contained a higher percentage of sugar. While the reducing sugar also generally increased with greater foliage, the increase in reducing sugar was relatively less than the increase in total sugar. The accumulation of sugars with the larger leaf areas was thus mainly in the non-reducing sugars. Total dry matter increased somewhat in proportion to the increase in sugar content.

Table 1.—Summary of Size and Composition of Apples Grown on Ringed Branches with Various Numbers of Leaves.

Variety.	Number leaves per fruit.	Average area of leaves, sq. in.	Number Apples.	Size,—end of season.			Chemical analyses of fruit—Per cent. fresh-weight.				
				Volume c. c.	Diameter inches.	Approx. number per box.	Reducing Sugar.	Total Sugar.	Dry Matter.	Acid c.c. N/10 NaOH.	Nitrogen.
Delicious	10	2.65	51	131.4	2.50	200	8.40	9.60	13.78	1.20	.025
"	20	2.89	72	167.4	2.70	163	8.68	10.86	14.31	1.30	.021
"	30	3.02	67	225.5	2.90	118	8.84	12.24	16.48	1.15	.024
"	40	3.15	59	227.2	2.90	118	9.32	14.00	18.68	1.25	.025
"	50	2.89	56	227.2	2.90	118	9.16	13.48	18.78	1.05	.025
Jonathan	10	3.22	89	141.6	2.55	188	6.54	9.55	14.48	4.50	.022
"	15	3.20	85	167.4	2.70	163	6.64	10.11	16.04	4.90	.025
"	25	3.31	92	199.0	2.80	125	5.80	9.83	17.59	6.15	.024
"	40	3.44	78	216.1	2.86	120	5.21	10.05	18.74	6.75	.025
Rome Beauty	10	4.13	49	180.7	2.75	150	6.60	6.92	12.20	1.30	.022
" "	20	3.75	59	248.7	3.05	105	6.96	8.20	13.75	2.00	.027
" "	30	4.24	55	313.9	3.30	92	7.08	8.80	14.14	2.30	.027
" "	40	4.57	56	361.1	3.50	82	7.20	10.08	16.55	2.73	.032
" "	50	4.53	48	352.0	3.45	84	7.46	10.48	17.03	2.95	.029
Winesap	10	2.31	57	122.6	2.40	210	7.54	8.28	13.01	2.15	.036
"	20	2.37	47	178.2	2.75	150	8.90	9.12	14.64	3.15	.032
"	30	2.47	44	204.6	2.90	127	9.14	10.44	16.98	2.25	.032
"	40	2.54	35	222.0	2.95	117	8.88	10.32	17.19	2.40	.032
"	50	2.49	47	213.0	2.92	122	10.28	12.04	19.17	3.13	.034

The behavior of titratable acidity is especially interesting. In Delicious, a variety containing relatively little acid, there was not a consistent variation in acidity with the different leaf areas. With the other varieties, however, the acidity was generally lowest with the smaller leaf areas and increased consistently as the foliage increased. Apparently, the fruit supplied with an abundance of carbohydrate materials from the leaves contained the higher acidity. High sugar content and high carbohydrates are associated with high dessert quality in Apples. These data indicate that allowing the trees to overbear not only affects the size of the fruit, but affects the chemical composition and quality of the fruit as well.

Fruit Bud Formation.

The ringing and foliage or fruit removal was done in June, 1929 (agreeing with December in Australia), before fruit bud formation for the following year had occurred. In almost all of the tests no fruit buds were formed on branches carrying only 10 leaves per fruit. With 20 good leaves per fruit on ringed branches, fruit bud formation was abundant in Jonathan and Rome Beauty, and some fruit buds were formed in Delicious and Winesap. With 30 leaves, fruit bud formation was abundant in all varieties, most of the buds forming flower parts regardless of their position or whether or not the spurs were carrying fruit. Similar results on unringed branches, however, where the food materials are free to move out of the branches, cannot be expected from equal leaf areas. Nevertheless, the results indicate that fruit bud formation is dependent upon an abundance of synthesised materials from the leaves. Furthermore, this material is not available in sufficient quantity to insure fruit bud formation for the following season unless there is an abundance of foliage in proportion to the fruit.

Next follows results of Pear tree experiments. — See next month's "Fruit World."

Discussion of Results in Relation to Orchard Practices.

THE RESULTS INDICATE that a fairly large amount of foliage is necessary to produce a good commercial Apple or Pear. Apparently the total amount of carbohydrates manufactured in 20 to 30 leaves is necessary to form a single fruit of good commercial size. In addition, a relatively large amount of carbohydrates is needed to furnish the food materials for the vegetative growth of the tree. Thus it seems that from 40 to 50 leaves per fruit are needed with varieties such as Delicious, Winesap, and Rome Beauty to obtain large sized fruit and at the same time to enable the trees to bear regularly.

To obtain maximum production per tree or per acre it is necessary to procure maximum leaf area per tree or per acre. As previously stated, leaf area is associated with tree growth, the greater the growth, generally, the greater the foliage carried.

Pruning by removing buds which would normally develop leaves, tends to reduce leaf area. On the other hand, pruning stimulates growth in the remaining buds so that in many cases the foliage removed, by pruning, is largely replaced by the time growth is complete. Pruning, therefore, tends to increase the foliage per fruit, and thus to increase the size of the fruit, and to reduce the amount of hand thinning of fruit required.

Heavy pruning, however, will generally decrease the total foliage area and the total fruit produced.

The application of fertilisers which stimulate growth in the trees increases leaf area. Probably the most important factors in maintaining vigorous growth in the orchard are:

(1) An available supply of nitrogen;

(2) An abundance of organic matter in the soil; and

(3) Sufficient moisture.

Vegetative growth can be maintained only if both organic matter and nitrogen are available in the soil in sufficient quantitites. Orchard soils are more often deficient in organic matter than in any other substance. The cover cropping system in effect in most of the orchards of Washington has been of tremendous value in maintaining the organic matter content of the soil, and, in case of lucerne or other legume cover crops, in maintaining nitrogen as well. In many orchards, however, the growth of cover crops has become limited, with a consequent decrease in the organic matter which is being added to the soil each year.

Orchards being operated under dry conditions frequently are not making sufficient growth, because of both lack of water and lack of organic matter in the soil. It is difficult to remedy this condition unless more water can be provided. Under these conditions with reduced leaf area and reduced leaf function, a reduction in acre yield appears to be inevitable.

Estimates made in orchards in the Wenatchee district indicate that average sized 20 to 25-year-old trees making a fairly good vegetative growth will carry from 60,000 to 100,000 leaves per tree. The number of Apples on such trees which should be left to obtain fruit of best commercial size and quality, and at the same time enable the trees to produce crops annually, would appear to be from 1,500 to 2,500.

Jonathan Apples in the Pacific North-west of U.S.A., are subject to physiological or internal breakdown. This trouble is most serious in large-sized fruit, generally from trees carrying a light crop. In experimental storage tests, fruit grown from ringed branches carrying 25 leaves or more per fruit developed breakdown in considerable quantities, whereas, fruit grown with only 10 and 15 leaves per fruit showed no breakdown. These results substantiate tests by Palmer in British Columbia, which indicated that fruit from trees producing a light crop is more subject to breakdown than that from trees producing a heavy crop. Consequently, heavy thinning of Jonathans is likely to lead to some increase in this trouble. Jonathan trees apparently should not be thinned as heavily as the other varieites here studied, if loss from breakdown is to be avoided.

Results also indicate that heavy thinning has a definite tendency to reduce yield. Fruit grown with 10 leaves per Apple was more than half as large as fruit grown with 20 leaves per Apple. Similarly, fruit grown with 20 leaves per Apple was considerably more than half as large as fruit grown with 40 leaves per Apple. This probably results from the fact that with the larger leaf areas the fruit produced was richer in carbohydrate materials; also, with larger leaf areas there is more storage of food materials in the twigs, buds, and branches, whether the branches be ringed or unringed. On the other hand, it is recognised that a maximum yield cannot be obtained one year without generally a reduction in the crop the year following. A crop of 2,000 Apples on a vigorously growing 20-year-old tree will generally result in 12 to 15 packed boxes, or, in the case of Rome Beauty possibly 20 packed boxes. Such a crop will give an excellent yield per acre in the orchard, and will probably represent about the maximum that can be obtained with most varieties without seriously reducing the crop for the next year. Such results can be obtained only when the leaf area of the tree is built up to the maximum by a vigorous vegetative condition and when the water supply is ample to keep these leaves functioning throughout the growing season.

An understanding of the functioning of leaves and leaf relationship is basic to an understanding of nearly all orchard operations. This statement applies particularly to fruit thinning, to pruning, to irrigation, and to fertilisation and soil management.

By building up a large leaf surface in the tree, the grower is developing manufacturing machinery which is essential to heavy production.

The question has often arisen as to whether it is always desirable to thin to one fruit per spur. When the crop on the tree is light, certain branches may have a relatively heavy set, and the question arises as to whether these branches should be thinned as heavily as when the entire tree carries a heavy crop. Results of investigations on these questions, together with unpublished data by Haller and Magness, indicate that there is relatively free movement along the main branches of the tree and that fruit may draw on leaves at considerable distances for its development. Consequently, when the crop as a whole is light it would not seem to be desirable to thin to single fruits on strong-growing spurs. Also, heavily loaded branches closely adjacent to others carrying few fruits do not need to be thinned quite as heavily in order to develop satisfactory size in the fruit.

The relatively large quantity of foliage needed to develop a crop of fruit also emphasises the importance of keeping this foliage free from insect pests and disease. Sucking insects which draw nutrient materials from the leaves are prevalent in Washington orchards, and are likely to cause marked reduction in the size and quality of the fruit if not controlled. Leaf hoppers and red spiders are serious when present in the orchard in fairly large numbers.

It is a common observation that very heavily loaded trees may produce fruit of poor color. Since high sugar content in the fruit is related to the best color development, it is apparent that prevention of overbearing by systematic thinning and production of healthy leaf area are the practical ways for growers to increase the color of the fruit.

Summary.

A study has been made of the relationship between foliage area and fruit development in four varieties of Apples and three of Pears.

In all varieties tested, ten good leaves per fruit were not sufficient to develop fruit of satisfactory commercial size on ringed branches. Twenty to 30 leaves gave fruit of good commercial size, with larger leaf areas producing larger fruit.

The greater the leaf area per fruit, the greater the total size of fruit procured, although the increase in size of fruit was not in proportion to the increased foliage. The size of the fruit obtained with 20 leaves was always less than double that of ten leaves, while fruit grown with 40 leaves was also less than double the size of that grown with 20 leaves; thus apparently the heavier the thinning the smaller the total tonnage of fruit produced.

Total sugar, total dry matter, and titratable acidity of fruit on ringed branches with large leaf surface were greater than those of fruit on the same tree with small leaf area.

Fruit bud formation did not occur

on branches ringed with ten leaves per Apple. In Jonathan and Rome Beauty varieties, ample fruit bud formation occurred with 20 leaves per Apple, and an abundant fruit bud formation occurred when 30 or more leaves per Apple were present on ringed branches.

Since a relatively large amount of synthesised food material is required to develop roots, trunk, and limbs of the normal tree, it is probable that 30 to 40 leaves per fruit throughout the tree are necessary to give results similar to those obtained under conditions of these tests with 20 to 30 leaves.

(To be Continued.)

Cultural Hints for Fruit Growers.

Report of Research Committee of the Victorian Fruit Marketing Association.

Drainage ∴ Cover Crops ∴ Pruning ∴ Cultivation ∴ Thinning ∴ Pollination ∴ Manuring

IN ORDER TO BE OF SERVICE to Victorian fruitgrowers, a Research Committee of the Victorian Fruit Marketing Association has been formed to prepare a series of cultural directions with the object of assisting the production of even crops annually and maintaining maximum returns.

Committee.—The Committee is constituted as follows:—Messrs. J. W. Bailey (Chairman, Narre Warren), W. H. Carne (Pakenham), H. Ford and K. Eagle (Harcourt), G. Brown (Red Hill), A. F. Thiele and W. A. Webb (Doncaster), C. M. Griffeth (Moorooduc), C. H. Jost (Quantong). The Committee has had the active co-operation of the Department of Agriculture, including Mr. J. M. Ward, Superintendent of Horticulture, Mr. F. M. Read, M.Agr.Sc., and Mr. A. G. Strickland, M.Agr.Sc.

The following helpful advice is now tendered to growers:—

Drainage.

It is imperative that drainage should be free. Water may be prevented from soaking in and quickly removed by means of surface drains, but where land is subject to waterlogging and is giving returns which will stand the capital cost of underground tile drainage, this method is recommended for removing excess water.

Cover Crops Important.

Many growers have not yet realised the value of a cover crop for removing surplus moisture. In experiments conducted by the Department of Agriculture at Tresco (Northern Victoria) it was found that a green crop of Peas and Beans removed during its growth up to 40 times as much water from the soil as was removed by a very extensive drainage system.

Anything which can be induced to grow—Capeweed or sown crop—is of value. This must be turned under in the spring (see note on manuring).

Pruning.

Last season the Apple crops were comparatively light, and as extra heavy crops might be expected for the coming season, the following practice is recommended for 1931 winter pruning.

Growers should do some severe thinning out of both spurs and laterals—more particularly fruit spurs—otherwise the trees will carry too much fruit next season and very little the following.

Leave short laterals untouched (by short laterals it is meant Jonathan and like varieties 12—14 in., Yates 8—9 in., Dunn's 9—12 in.). Strong growing upright laterals should be removed altogether.

Pear Pruning.—With regard to Pear pruning in Southern Victoria, it is usual to prune heavily until a good sturdy tree is produced. If early bearing is desired heavy pruning of the laterals should be avoided.

Growers will, of course, have to use their own discretion in dealing with individual trees, as it is impossible to lay down hard and fast rules.

Cultivation.

Good cultivation is essential. Remember, however, that feeding roots are very close to the surface and the less they are disturbed the better. The use of the deep disc in summer is not recommended, as this is liable to cut the feeding roots and pack the soil.

Thinning.

During a heavy year drastic early thinning is recommended. This allows the trees to make bloom buds for the following year and thereby bring about balanced crops on such varieties as Dunn's, Statesman, and other well-known biennial croppers. Thinning removes from the trees fruit which is of no commercial value, thus saving time and labor during the picking season. Thinning of blossoms is preferable to thinning of fruit. In fact, fruit thinning to be of any value must be done just after the fruit has set.

Confine the size of your orchard to that quantity to which you can give personal attention and for which you have skilled and scientific labor.

Irrigation.

If you have no water for irrigation, try and secure it, either from existing systems or private catchments. This will give your trees a much better chance to crop each year.

Pollination.

Every orchard will benefit by making provision for cross fertilisation. This is particularly noticeable during the light years.

1. In planting, provide for cross fertilisation by having alternate double rows of varieties which will cross fertilise. Bulletin No. 58, new series, from the Department of Agriculture gives a list of cross fertilising varieties.

2. Perform grafting—for example, graft Rokewood, which is a strong producer of pollen, on varieties which flower at the same time as Jonathan and Yates.

3. Temporary provision may be made at blossoming time by placing, among the trees, branches of fruit blossom from other trees. These introduced blossom branches should be placed in jars containing water.

Where bees are not abundant, they should be introduced; at least one hive per acre is recommended.

It has been noticed in cross pollination, especially if the pollinator is quite close, that the fruit sets quickly and before thrips can do much harm—except with such a bad infestation as in 1914, when the thrip destroyed the blooms before they opened.

Another idea that helps on late flowering varieties (i.e., Rome Beauty and Five Crown) is to spray with red oil 1 in 30 at or about the end of July. This forces them to flower about two weeks earlier and reduces the flowering period, and so enables these varieties to set their fruit before the thrips do much damage.

Manuring.

The ploughing under of a green crop from year to year is strongly recommended. It is desirable to get growth as early as possible in the season and to plough the crop under at least a month before the fruit trees blossom. To further add humus to soil, farmyard manure should always be used if readily available.

In most orchards the necessity exists for using artificial fertilisers. Apply some nitrogenous fertiliser, such as sulphate of ammonia, at the rate of 2—3 lbs. per average tree—two or three weeks prior to blossoming.

On sour soils, if sulphate of ammonia be used, put on an equal dressing of lime about the same time. This dressing is advocated to overcome the acidifying effect of the sulphate. If the soil is definitely in need of lime, however, a dressing of not less than 1 ton per acre every four or five years may be necessary.

In general, it is best to apply manures in the spring, because that is the time of the year when the tree absorbs most of its supplies.

On most Victorian soils a dressing of superphosphate at the rate of 3—4 lbs. per tree in the spring is recommended. Potash is generally beneficial to stone fruits. Potash is necessary for such fruits as the Apple when any leaf scorch conditions are noticed during the growing season.

Leaf scorch conditions are often wrongly attributed to salt in the spraying water or the use of lime sulphur. These leaf scorch conditions often indicate a lack of potash in the soil. The following publications on the subjects touched on above are obtainable from the Department of Agriculture:—

"Pruning," J. M. Ward. May Journal, 1931.

"Biennial Bearing in Apples," Frank M. Read. Journal of Agriculture, June, 1931.

Drainage.—Journal of Department of Agriculture of Victoria, Vol XXVI., 1928, page 428.

Green Crops.—Journal of Department of Agriculture of Victoria, Vol. XXIX., April, 1931, page 177.

Journal of Department of Agriculture of Victoria, Vol. XXVI., page 432.

Pruning.—Journal of Department of Agriculture of Victoria, Vol. XXIX., May, 1931, page 219.

Irrigation.—Journal of Department of Agriculture of Victoria, Vol. XXVII., page 578.

Vol. XXVIII., November, 1930, page 653.

Pollination.—Planting Fruit Trees for Interpollination, Bull. 58 (N.S.), 4d. (including postage).

Budding, Grafting and Inarching, Bull. 63 (N.S.), 5d. (including postage).

Journal of Department of Agriculture of Victoria, Vol. XXVIII., October, 1930, page 602.

J. W. BAILEY,
Chairman, V.F.M.A. Research Committee.
Narre Warren, Vic.

Australian Apple and Pear Export Council.

Important Conference Called for August.

THE AUSTRALIAN ASPECT of the Apple and Pear export business is now fully realised by all forward-looking growers and exporters.

In order to co-ordinate the activities of the exporting interests in the several States, an important conference was held at Melbourne (in conjunction with the Markets Department) last December.

The Australian Apple and Pear Export Council was then founded.

Representative fruit associations in all the Australian States have affiliated with the Apple and Pear Export Council, and the first official conference has been called to meet at Melbourne in August (probable dates August 19 and 20).

Some of the subjects set down on the agenda paper include the following:—

Fruit export grading regulations.
The fruit case question.
Forecasting crops
Co-ordination of States in distribution of shipments.
Freight on export fruit.
Australian representative for England (as per letter from Markets Department and invitation from Empire Marketing Board).
Formation of Overseas Committee.
Pear export.
Stowage of fruit for export.
Uniform inspection.
Trade with the East.
Duty on Australian fruit entering Germany.
Hail insurance.
Temperatures in ships' holds.

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That there are many problems confronting the Australian Apple and Pear export industry is fully realised.

It is also realised that export is vital to the existence of the industry.

The getting together of the fruit exporting interests to deal with matters from the all-Australian viewpoint is a matter of first importance.

A constitution has been drafted for the Australian Apple and Pear Export Council, and this has been adopted with minor alterations. Voting is based on the quantities exported from the several States.

IMPERIAL FRUIT SHOW,

Manchester, October-November, 1931.

The Imperial Fruit Show will be held in the City Exhibition Hall, Manchester, from October 30 to November 7, 1931. A first-rate programme has been drawn up, and good success is assured.

These Imperial Fruit Shows are of great importance, and are performing good service to the fruit industries in the United Kingdom and overseas dominions.

An illustrated catalogue is to hand from Messrs. F. Ferguson & Son, Australian Nurseries, Hurstville, N.S.W. This catalogue contains lists of deciduous and citrus fruits, Grape vines, Roses, Nuts, ornamentals, small fruits, etc. A list is given of varieties of fruits recommended for home orchard planting. Noted among the flowers were Carnations, Chrysanthemums, Dahlias, Ericas, etc.

N.S.W. Fruitgrowers' Federation.

Annual Conference in Sydney.

IN OPENING the annual general conference of the Fruitgrowers' Federation of New South Wales, the Minister for Agriculture (Mr. Dunn) said the Government would introduce a Bill to deal with vendors who, to evade the law were trading as "merchants": the amount of the bond would be increased. Numerous experiments were in hand to assist pest control: to improve the citrus industry by bud selection, approximately 13,300 Washington Navel and 8,500 Late Valencia buds were supplied to nurserymen.

The Chairman (General Heane), spoke of the urgency for amending the Farm Produce Agents' Act.

It was decided at the instance of Mr. Inman (Leeton), to protest against any further increase in the Sales Tax on jam and canned fruits.

Annual Report.

IN THE COMPREHENSIVE REPORT of the year's activities of the N.S.W. Fruitgrowers' Federation, the Secretary, Col. E. E. Herrod, states that the proposed system of accredited agents was opposed by the Agents' Association, but the Board of the Federation still favored the scheme. Amendments to the Farm Produce Agents Act were under review, particularly in regard to the bond and the inclusion of merchants.

The Federation is carrying on the work of the Central Citrus Association pending its resuscitation or the formation of another Association. The Federation is now affiliated with the Central Citrus Council and the Apple and Pear Export Council.

During the year close attention has been given to export and local grading regulations for Apples and Pears. Hail insurance has been carefully investigated, but insurance companies still show a disinclination to deal with this class of insurance. The position of the market representative has been maintained during the year, although Mr. McDermott, who filled the position for most of the year, resigned at the end of April.

Retail sales have been greatly increased in Sydney per the medium of some of the large city stores. McIlwraith Ltd. now dispose of up to 2,000 cases of fruit per month; Woolworths Ltd. handle fruit as a "Friday special," and dispose of up to 200 cases in one day. Large retail firms like David Jones, Anthony Horderns, Grace Bros., and Mark Foys have also experimented with the idea. A number of fruit retailers have tried the open front or market type of shop, which appears to bring about more business, the turnover of some is very large.

Attempts were made to organise a citrus advertising scheme, but the limited support from growers did not justify its continuance. Attempts to lift the embargo on citrus imports have been successfully resisted by the Federation.

Other matters dealt with in the Federation report include sugar inquiry, bud selection, Orange juice drinks, duty on fruit case timber, trade in the East, citrus grading regulations, health week, etc.

Finance.—The total receipts of the Federation for the twelve months ending March 31, 1931, amount to £2,263/17/—Orchard Registration Fund, £1,962/19/6; Oversea and Irrigation Grant, £135; Wine Delegation Grant, £86/1/2; are the chief items. Expenses for the year amount to £3,784/8/-, the main items being salary (secretary, market representative and typist), £1,486/15/-; travelling expenses, £478/12/11; annual Conference expenses, £451/8/-; rent, £217/7/-; publicity, £202/5/10. A reduction of £1,624/10/6 from the Orchard Registration Fund Grant is disclosed. This is understood to be due to the fact that a full twelve months' grant is not included.

The proposed Transport Bill was denounced, and on the motion of Messrs. A. V. Tonking (Orange) and A. E. Herring (Batlow), it was unanimously decided to request that the Bill be submitted to a committee of experts, and that evidence be heard from primary producers and others on the subject.

It was also decided to request the Government to leave unregulated the motor transport of fruit and vegetables. In the discussion, metropolitan growers said it was sometimes worth while to pay double for motor transport. Country representatives urged the claims of growers up to 500 miles from Sydney, who preferred to use the railways.

Official recognition of street vending of fruit from barrows was requested at the instance of Mr. J. Brann, Lavington. This proposition received general endorsement, with the proviso that suitable supervision be exercised.

From the Irrigation Areas a motion originated that hawkers of fruit and vegetables be registered. Some hawkers in country towns were offering fruit at a lower price than that at which it could be purchased from growers, which suggested they were selling something not paid for.

It was resolved that orchardists be allowed time to pay the Unemployment Relief Tax instead of having to pay on demand, and that where a taxpayer's business had failed this year he should not be asked to pay a retrospective assessment until his property was returning a living income.

A proposal that the Department be asked to appoint honorary inspectors from among the orchardists was defeated, as was also a resolution from the northern district that Pastures Protection Boards be not allowed to tax orchardists according to the stock-carrying capacity of orchard land.

In reply to Mrs. Piddington (Central Tablelands), the Secretary (Mr. E. E. Herrod) said that markets in the East were being steadily developed. The available space in every boat was fully taken up.

When railway matters were discussed, Mr. F. Dowling, Acting Goods Superintendent, attended and explained many of the difficulties in the present time of financial stress. The Department wished to help producers: manures were being carried at very low rates: the railways were the people's property. At the instance of Mr. E. Ray (Bathurst), a resolution was carried "that when an eight-ton truck is ordered, and to suit the Commissioners' convenience a larger truck is sent, the eight tons of fruit should be carried at the usual truck rates. Other resolutions requested—(a) fruit cases being carried in covered vans instead of open trucks, and (b) an amendment of freight rates to Brisbane: the rate from Albury and Sydney to Brisbane was 5/3 per cwt., and from New England towns to Brisbane 10/- per cwt. It was decided, on the motion of Mr. Sterland (Gosford), to request that growers' lorries crossing Peat's Ferry punt be carried at the same rate as ordinary cars. For a utility truck the grower had to pay 2/6; motor-cars 1/-.

Conference decided to oppose any artificial control or increased taxation of wheat, bran, or pollard (in the interests of growers who were also poultrymen), also to endeavor to secure a reduction of registration fees on tractors.

Regarding fruit cases, Conference voted against the proposal from Central Tablelands that all cases be sold with the fruit. The Board was asked to investigate Mr. J. Neil's resolution in favor of one-twelfth of the orchard registration fees being granted to the Association in the district where collected—thus to assist local organisation.

Trade with U.S.A.

A proposal from the Southern District in favor of requesting the Federal Government to prohibit the importation of American Grapes was withdrawn at the instance of Mr. C. G. Savage, Director of Fruit Culture. Mr. Savage said that this resolution would be likely to prejudice the negotiations now in progress to secure the lifting of the American embargo on Australian fruit. Last year, continued Mr. Savage, the importation of American Grapes was nil, and the quantity the previous year was infinitesimal.

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Citrus Matters.

On the third day of the Conference much time was taken up in discussing the creation of a citrus advertising fund by a levy of ½d. per case on all fruit sold. The value of advertising was stressed by Mr. H. G. Such and by the Secretary, Mr. Herrod, and the proposal was adopted.

During the discussion, Mr. W. H. Midson, of Oakville, advocated doubling the orchard registration fees to raise £4,000 to boost the whole fruitgrowing industry. It was also decided that a levy of 1d. per case be made on all citrus fruit marketed in order to stimulate export and discover new markets.

Codlin Moth Control.

After much discussion, Conference resolved in favor of the reintroduction of the compulsory bandaging of trees in those districts where local Associations desired it. The State Entomologist, Mr. W. B. Gurney, said that bandaging was effective when used in conjunction with spraying. Mr. W. B. Pascoe (Orange) said that the great majority of Pome-fruit growers in the Central Tablelands desired the reintroduction of the bandaging regulations.

Other matters dealt with included a request that fruit-stealing be dealt with as with sheep stealing—imprisonment without the option of a fine.

The subject of agents' commission was referred to the Board. Discussion proceeded along the line of agents' commission to be fixed at 7½ per cent., and that the minimum charge of 6d. per case be abolished.

Regarding market administration, it was decided to ask the Government to appoint a commission of three—representing growers, distributors and the Government, to control the markets.

A minimum registration fee of 2/6 was requested for "backyard" orchards.

Export Grading Regulations.

A resolution was carried "that cases marked 'Standard' shall contain 100 per cent. slightly blemished fruit, and that small fruit, if unblemished, shall be labelled 'Special' instead of 'Plain.'"

Election of Officers.

The election of officers resulted as follows:—President, Mr. J. Heane (unopposed), for the ninth successive period; Board, Messrs. A. U. Tonking (Orange), T. A. Tester (Young), H. G. Such (Griffith), F. D. Inman (Leeton), A. E. Herring (Batlow), W. W. Challis (Kentucky), and A. J. Taylor (Singleton), all of whom were re-elected. The following new members were elected to the Board:—Messrs. A. S. Brown (Ourimbah), T. S. McDonald (Gosford), F. B. McKenzie (North Richmond), P. C. Best (Dural), and R. G. Edgell (Bathurst).

Southern Districts' Conference.

A conference of the southern districts' representatives of the Fruit Growers' Federation was held on June 2. It was decided that ten delegates, representative of the Young, Lavington and Batlow branches should attend the annual conference in Sydney. The 1932 group conference will be held at Young. The following resolutions were carried:—

"That this meeting affirms the desirability of retaining the office of market representative; that the matter of the difference in registration fees between tractors and motor lorries be brought to the notice of the transport authorities to see if the tractor fees can be reduced."

"That the suggestion be put forward to the authorities that the present system of relief be abolished, and that work be substituted, and money allocated to local governing bodies; that local fruit inspectors should be appointed to act in the dual capacity as regards export for both Federal and State Departments."

"That this conference protests against the additional impost of 1/6 per ton on all fruit exported; that in the interests of orchardists and soldier settlers, all instructional work and advice should be carried out by officers of the Department of Agriculture, instead of the Lands Department, and that the Federation take the matter up with the Department of Agriculture."

"That the Farm Produce Agents Act be amended to control and deal with agents and merchants, giving the Department the necessary authority to follow the sale of a case of fruit from producer to retailer or consumer, in order to prevent trafficking among agents; that the control of fruit marketing be removed from the City Council and placed in the hands of a commission of three representatives of growers and distributors, with a Government nominee as chairman; that representations be made to the Minister of Agriculture urging that the Farm Produce Agents Act be amended immediately, in order to ensure that bonds are taken out in insurance companies approved by Government."

"That the Plant Diseases Act be amended to give Departmental officers authority to order the destruction of diseased and pest-infested fruit trees, and neglected orchards."

"That, as street vending of fruit is essential to the welfare of producers, and provides means by which consumers obtain fruit at reasonable prices, the authorities be requested to give official recognition to the system, provided suitable supervision is exercised."

NEW SOUTH WALES.

Mandarin Brown Spot.

Windsor.

In the Hawkesbury district, Emperor Mandarin crops are suffering from brown spot. Not only is the fruit attacked, but also the young wood. Growers are spraying with Bordeaux to check the disease.

Banana Culture.

Murwillumbah.—Banana-growers were very interested in the ballot in Queensland on the subject of the acquisition of the Banana crop by the Committee of Direction of Fruit Marketing, Brisbane. During the progress of the campaign, Mr. H. L. Anthony, President of the N.S.W. Banana Growers' Federation, issued an appeal to growers in N.S.W. to remain neutral: his sympathy was with the growers in Queensland. Banana-growers in N.S.W. desired to enter the Melbourne market, but would only do so honorably: at present the time was not opportune.

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Banana-growing around Murwillumbah commenced over 20 years ago in a small way. Mr. S. Farrant, of Condong, was successful in growing and marketing Bananas, and soon an industry was built up.

Tasmania.

State Fruit Advisory Board.

Exchange on Fruit Shipments—Fruit for Brisbane—Sydney Associated Agents—Advertising in England.

AT THE MEETING of the Tasmanian State Fruit Advisory Board on June 17, there were present Messrs. B. J. Pearsall (Chairman), O. J. Morrisby, W. H. Calvert, M.L.C., A. H. Weedon, M. Calvert, J. H. Astell, F. Harrison, B. H. Saunders, and the Secretary, P. H. Thomas.

Fruitgrowers' Fund.—After consultation with representatives of Overseas and Interstate Shipping interests in respect to the collection of the 1/16th of a penny levy, it was reported that difficulties were encountered through certain growers refusing to pay, and it was decided to arrange a further conference to arrive at a satisfactory arrangement.

Space Allotment.—Overseas shipping agents stated that they were considering the granting of the Board's request for the appointment of a fruitgrowers' representative on the space allotment committee.

Exchange on Fruit Shipments.—This subject evoked much discussion. The Board's auditor reported that in many of the account sales submitted growers were not getting the benefit of the exchange. Typical examples were quoted—sum due £46.97, payment made £33/2/10. The Secretary stated many growers had applied to have their accounts investigated. The Chairman said that in five instances only there was a discrepancy of £118 due to growers. Mr. Astell thought that the agents concerned should be invited to meet the Board on the subject. It was finally decided, on the motion of Messrs. Saunders and Weedon, to prepare a test case, legal opinion to be sought.

Interstate Charges.—The Secretary tabled lists of agents' charges operating in interstate markets. It was decided to tabulate these and circulate to members.

Fruit for Brisbane.—It was decided to seek a reduction in freight and better conditions of carriage with respect to Tasmanian fruit for Brisbane. To send direct by boat cost 2/3 per case, by sending to Sydney for transshipment the cost was 1/11. Complaints are made that the s.s. "Ngatoro" carried the fruit badly.

The Secretary (Mr. P. H. Thomas) said that if inspectors had the power to prevent unsuitable fruit being sent to interstate markets, as they had with export fruit, there would be a big improvement in the trade.

Sydney Associated Agents.—It was decided to admit the following into membership with the Sydney Association of Agents. The Australian Fruit and Produce Co., Messrs. W. H. Southcott, Hay Bros., Joshua Terry, Herbert Wilson and J. Hawke.

Australian Apple and Pear Export Council.—The constitution was discussed, also the matter of State representation. It was decided that the suggested dates, August 19 and 20, were suitable.

Correspondence was received from the Premier, with regard to advertising Tasmanian fruit on overseas markets, from the Agricultural Bureau, re standard export case, and C. H. Smith & Co., re essay on "Apple and Pear Industry."

Overseas Advertising.—The Tasmanian Agent-General (Mr. D'Arcy Addison), reported that as regards advertising fruit in Great Britain, the threatened abstention of certain fruitgrowers and co-operative concerns from the advertising levy might involve the loss of the Federal Government's grant: this now was to subsidise by 10/-, every £1 raised up to £3,500. To meet the complaint that Tasmania, which supplied two-thirds of the levy, was not receiving very wide publicity, Mr. Hyland, publicity director, arranged for special prominence for Tasmanian fruit. Difficulty had arisen in England because of the declared policy of the Port Huon Fruitgrowers' Association in favor of the abolition of the present method, and for Tasmanian advertising funds to be administered apart from the general funds for Commonwealth fruit advertising.

The opinion that Tasmania was not reaping sufficient benefit from the advertising funds was expressed by the Chairman (Mr. B. J. Pearsall), Hon. W. H. F. Calvert (Chairman Port Huon Fruitgrowers' Co-operative), Mr. F. Harrison, and Mr. Astill. The letter suggested that Tasmania do her own advertising through a trade commissioner in London.

After further dicussion, the matter was held over in order that further information might be obtained.

APPLES FOR CANADA.

The prospects for exporting Apples to Canada are dealt with in a letter from Mr. E. J. Mulvaney, Secretary Commonwealth Markets Department, to the Australian Apple and Pear Export Council, as follows:—

Dear Sir,—

Forwarded herewith is an extract from a report received by this Department from the Australian Trade Commissioner in Canada:—

> "I have to advise that last year New Zealand sent some Apples to this market on consignment. This year some have been sold forward on a c.i.f. basis. I know of one instance where the broker has completed a contract at 12/- per case c.i.f. Montreal, the quantity involved being 22,000 cases. The Apples are expected to arrive in the first week in June, the variety being understood to be 'Delicious'."

With a view to extending our overseas markets, it would be appreciated if this information could be brought under the notice of the Australian exporters. No doubt many shippers would be prepared to ship to Canada in the same way as the New Zealand exporters have done.

EVAPORATED APPLES.

Market in Brisbane.

That a good market exists in Brisbane for evaporated Apples is stated by a correspondent in a letter to the Editor.

The evaporation of Apples has been undertaken more in Tasmania than the other States. Continuing, this correspondent writes:—

"If any of your growers are going to attempt this product, I shall be pleased to get in touch with them, as I can influence a very profitable business in these among our best merchants, having been selling Tasmanian qualities for a good many years, and could dispose of two or three thousand cases during the season, quality and value being equal.

"I may state that I only sell to our wholesale and large retail merchants, and all goods on "Cash Against Documents' basis, on which I receive the usual commission.

"Every class of dried fruit I handle and do a good business for S.A. and N.S.W. agents."

Any reader interested is invited to write to the Editor, who will pass the enquiry on.

Export News and Notes.

THE EXPORT OF FRESH FRUIT from Australia this season has been fairly satisfactory, and on the whole growers should do well. For Pears the market has been particularly good: then again, the exchange rate has been altogether in favor of the growers.

Reports from England, however, reveal that the carrying quality of some of the Australian fruit this season was not as good as usual. This certainly applies to some parcels of Victorian Apples, particularly Jonathans of the larger sizes. This was undoubtedly due to the abnormal conditions during the growing season. The larger sizes preponderated because of the smaller crop.

When the "Nestor" discharged at Liverpool it was found that in some instances there were as many as 50 bad Apples in a case.

Even with Western Australian fruit, which generally lands in good condition, there was more waste than usual.

On the other hand, Tasmania scored in having her fruit discharged in a much better condition than usual.

Prices are deemed to be generally fair—considering: (a) that America shipped such consistently heavy quantities during the Australian export season to the United Kingdom and the Continent; (b) that both Victorian and Western Australian fruit was not in the best condition on arrival; (c) that much of the Victorian fruit was blemished by hail marks.

It has also to be noted that American shipments were on the British and Continental markets later than ever before—in substantial quantities.

ADVERTISING AUSTRALIAN FRUIT.

The advertising of fruit has grown into an enterprise of great value.

This advertising programme may be described thus: (1) A general advertising scheme under the aegis of the British Fruit Trade Federations.

The enterprise was started in 1923. It originated in Liverpool, when some of the leading brokers guaranteed a sum of money—no contributions being sought from growers.

Eventually the general idea was put before an advertising agency, which took charge, and the programme developed enormously, and has now become recognised, and is featured in Great Britain in press editorials. More and more of the brokers joined until the amount grew to around £50,000 per annum.

Then a section for retailers was created, every retailer who joined paying a fee of 7/6 per annum. For this sum, however, he received printed matter, window cards, posters, etc., worth several times that amount. Every conceivable advertising device was used, including attractive price tickets, balloons, etc.

All of this dealt with fruit in a general way, the slogan being "Eat More Fruit."

No country of production was mentioned, and all fruits were advertised: Apples, Pears, Oranges, Lemons, Grapes, also Melons. Decorated vans went from place to place—all advertising fruit.

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Then a separate campaign for South Africa began.

Advertising campaigns were also conducted on behalf of fruit from Canada, New Zealand and Australia.

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As regards the advertising of Australian fruit, similar methods employed as above described, except that the grower contributes a halfpenny per case, and a broker a farthing, to which is added a contribution from the Australian Government. Up to last year this contribution was £5,000, but has now been reduced to £3,500. This is for advertising fresh fruits only, and is quite apart from the contributions and publicity with reference to canned and dried fruit. In addition to this advertising, the Empire Marketing Board is conducting a big advertising campaign featuring the British Empire and the Dominions, this being as it were, a background to create Empire sentiment and allowing each Dominion or country concerned to carry on its own specific programme.

The effect of this advertising has been felt on the Continent, for Denmark now has an "Eat More Fruit" campaign, so has Germany. Readers in Australia and New Zealand are doubtless familiar with the attractive German posters and their slogan: "Esst mehr fruchte."

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The year 1930 was again a record one, in regard to the consumption of fruit per capita. The several fruit exporting countries are steadily increasing their exports to Great Britain and the Continent. These increasing quantities have all been absorbed, thanks to the continuous well-conducted publicity. As to the value of advertising fruit in Great Britain, no one has any doubts. Shortly after the inception of the general advertising campaign, it was carefully computed on a conservative estimate, that the extra values realised for the benefit of producers, £2,000,000 in Great Britain alone. This wonderful result was achieved by the wise expenditure of £40,000, which was contributed by the trade alone, there being at that time no contributions from the producers.

Mr. H. G. Colombie, President of the Victorian Fruit Marketing Association, when interviewed on this subject, speaks with great firmness as to the definite value of the advertising campaign. He points out that not only have increased quantities of fruit been consumed, but that also tremendous goodwill has been secured. The decision of a section in Tasmania to withdraw from the advertising fund is regretted, and the hope is expressed that after mature consideration, this decision will be reversed. The present situation has proved disturbing to the minds of those connected with the campaign for advertising Australian fruit in England. "This matter has become known," continued Mr. Colombie, "and I have been approached by certain growers who are also considering withdrawing from this advertising campaign, because they are not prepared to pay their quota, while others fail to do so. This is a matter which should be most thoughtfully considered at the forthcoming Australian Apple and Pear Export Conference in August."

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This matter of advertising in England will surely receive the careful thought of all producers; obviously it would be unfair for some to carry on and others to withdraw. This Australian campaign is conducted at present by means of money received by levies received from growers, also that paid by brokers plus the Government grant. Should the growers withdraw, the others will automatically follow. It surely is a matter for appreciation that the Australian Government, though sorely pressed for finance, has recognised the essential value of this advertising campaign and has continued its support.

The present advertising organisation has been built up by long experience, and it would be a thousand pities to see it scrapped. It must also be borne in mind that other countries are continuing their advertising campaigns, and such would receive all the greater prominence, if Australia were to withdraw from the field.

Among the reasons why the Americans so consistently and continuously advertise, are the facts: (1) there are thousands of marriages daily, and young couples setting up homes and deciding on the laying out of their income, are influenced by the continuous fruit advertising campaign. (2) Thousands of babies are born every day and young mothers are continuously reminded of the health and food values of fruit for themselves and the children. Advertising is not confined to poster work, but recipes and cookery books are issued, while all the time the value of the fresh fruit is emphasised. Advertising to have any permanent and cumulative effect must be continuous.

Victorian Fruit Marketing Association

THE monthly meeting of the Executive of the Victorian Fruit Marketing Association was held at the Board Room, Commercial Travellers' Club, on May 29. There were present Messrs. Colombie (Chairman), Carne, Bailey, Cave, Eagle, Ford, Harrison, Brown, Webb and the Secretary.

Other members of the Association present were Messrs. S. E. Scott, J. M. Jacobs, Vail and D. W. Grieve (Somerville).

Apologies were received from Messrs. Mills, Jost and Mellor.

Inspection of Export Fruit.—Mr. Bailey stated that the inspection for fruit for export was not uniform. A consignment of Pears rejected for alleged blemishes had brought high prices on the local market. There were more complaints this season regarding inspection from the Bunyip, Narre Warren and Gippsland areas, than in any previous season.

Mr. Carne said a line of 2¼ in. Shoreland Queen Apples were not permitted to go as "standard," and had been rejected from being exported under the "plain" grade. On further representations being made, the inspector was over-ruled and the fruit was permitted to be exported as "plain." Mr. Brown and Mr. Eagle said that inspection had been satisfactory on the Mornington Peninsula and at Harcourt. Mr. Ford stated that there had been certain complaints at Elphinstone. Mr. Brown said that the V.F.M.A. should be informed of the names and qualifications of inspectors. A conference of these inspectors with the Executive of the V.F.M.A. was desirable. Mr. Carne moved—

> "That a letter be sent to the Markets Department, stating that certain growers had been complaining to the Association in regard to the matter of inspection during the past season, and asking that the Department would be agreeable to summon a conference of all Victorian inspectors for a general discussion with the Executive of the V.F.M.A. prior to the forthcoming Interstate Conference."

A copy of the resolution to be sent to Mr. J. M. Ward. Mr. Cave seconded the motion, which was carried.

Fruit Cases.—Mr. Ford asked what was the position regarding fruit cases for the coming season. Several delegates gave instances of unsatisfactory treatment from local sawmillers. It was reported that efforts were being made to prevent the importation of softwood timber and shooks, also to do away with the present refund of duty on re-exportation. On the motion of Messrs. Bailey and Eagle it was decided—

> "That in view of representations made to this Association by growers' representatives to the effect that the majority of fruit cases manufactured in Victoria have proved unsatisfactory, this Association reaffirms its desire to retain entire freedom regarding the use of any type or shape container, and that no change be made in the present arrangements regarding the source and mode of supply of timber."

Field Day Suggested at Harcourt.—The desirability of practical demonstrations in pruning, etc., was introduced by Mr. Ford. After discussion it was decided to arrange, if possible, a field day at Harcourt, where demonstrations of pruning, manuring and spraying should be given, followed by a district rally and conference the same evening. It was decided to make enquiries as to the possibility of carrying out this suggested programme.

Pear Export Guarantee.—The Chairman directed attention to the Indemnity Clause, presumably freeing shipowners from certain liabilities with regard to faulty carriage. The question of the liability of ship owners, however, was under consideration, and certain claims had been entered with regard to the faulty carriage of s.s. "Limerick." Further discussion was deferred.

Pear Committee.—The desirability of having a permanent Pear Committee was emphasised. The following Committee was appointed:—Growers—Messrs. Ford (Harcourt), Bailey (Gippsland), E. I. Lawford (Metropolitan), Foster (Goulburn Valley), Jost (Quantong); shippers—Messrs. Mellor, Cave, Russell, Harrison and Parnham.

German Duty.—It was decided to request the Federal Government to make tariff amendments with Germany, to do away with the excess duty of 1/6 per case on Australian fruit entering Germany. This resolution to be sent to the Minister for Customs. Motion—Messrs. Webb and Carne

Improved Handling in Victoria.—Appreciation was expressed for the improved assistance rendered by the Victorian Department of Agriculture with regard to the loading into ships' holds. The full services requested by this Association for inspection of the loading operations had not been possible owing to the financial stringency, nevertheless the services rendered by the Department were to be warmly commended. Decided to write a letter of appreciation to the Minister for Agriculture. Motion—Messrs. Cave and Webb.

Harcourt Fruit Supply Society Ltd. Packing W.B.C. Pears for Export.

—Vic. Railways photo.

VICTORIAN FRUIT COUNCIL.

THE INAUGURAL MEETING of the Victorian Fruit Council was held at Melbourne on June 25, Mr. A. E. Hocking presiding. The following Associations—foundation members—were represented:—Fruitgrowers' Cool Stores' Association, Victorian Central Citrus Association, Victorian Fruit Marketing Association, Jam and Canning Fruitgrowers' Association, Wholesale Fruit Merchants' Association, and the Southern Fruitgrowers' Association. Mr. J. M. Ward, Superintendent of Horticulture, was also in attendance. The constitution was adopted, and office-bearers were elected as follows:—President, Mr. A. E. Hocking; Vice-Presidents, Messrs. L. Pepperell and W. J. Foster; Executive Members, Messrs. J. Davis, J. A. Parkes, and R. E. Boardman; Hon. Secretary and Treasurer, Mr. J. G. Aird, Ringwood; Auditor, Mr. Barrett.

Sugar Committee.—It was decided, on the motion of Messrs. Pepperell and Thiele, that Mr. W. J. Foster be nominated as the fruitgrowers' representative on the Sugar Committee: further, that growers' associations in the other States be written to favoring Mr. Foster's nomination and giving details of his qualifications.

Other resolutions were carried—requesting a revision of the tariff against Germany, as Australian Apples met a retaliatory tariff in Germany; that spray materials, also canned fruit and jam, be exempted from the sales tax, and that the Victorian Government be requested to conduct research to combat the Oriental Peach moth.

PRIMARY PRODUCTS MARKETING BILL.

To be Reintroduced in Victoria.

Addressing the Apiarists' Conference on June 24, the Victorian Minister for Agriculture (Mr. Slater, M.L.A.) said it was the intention of the Government, when opportunity offered, to again submit its marketing proposals. He hoped that the Legislative Council would not be hostile as on a previous occasion.

VICTORIA.

Market Notes and Comments.

Mr. A. S. Harrison (I.F.M. Co.) reports that whereas the trade at present is on the quiet side, it is pleasing to note that the quality of the citrus fruit coming forward is very good.

At the end of June the market for citrus was depressed: large quantities had come forward, and the public were not yet buying as freely as was desirable. This was due to some extent to the fact that some of the citrus marketed earlier, though golden in appearance because of the ethylene gas treatment, was pithy and unpalatable. Growers should see to it that only sweet Oranges were marketed, as the public were easily put off, to the detriment of all concerned.

There was a fair supply of Tasmanian Apples on the Melbourne market just now, and the local cool stores were emptying rather faster than usual.

As regards exports there was a noticeable improvement in the Victorian pack, and from reports to hand the same could be said for Tasmanian fruit.

The overseas markets on the whole had proved fair for Apples and good for Pears. Allowing for the benefit of the Exchange, growers generally would do well this season. The "Limerick" was one of the bad shipments, and there were some other boats in which the fruit had not turned out as well as was desired.

Mr. Harrison remarks favorably on the good quality and size of the Yates Apples now coming forward, and anticipates reasonably good values for subsequent sales.

Harcourt.—At a meeting of the Harcourt Fruitgrowers and Progress Association held on June 25, the financial position, was favorably commented on; in fact, the Association has never been in a better position financially.

A tender has been let to increase the accommodation at the Association's premises: the expense for this will be met from the current funds, without any additional calls on members.

A balance sheet was presented showing last years' trading operations: the position was deemed to be entirely satisfactory. The meeting was a cordial one, and members look forward with confidence to continued success.

EARLY TOMATOES.

Protection of Seedlings from Disease.

AN important point in the control of fungous disease in the Tomato seed-bed is to ensure that the young plants have ample room for development. They should be spaced three inches apart in rows four inches apart so that light and air may play their parts in strengthening them and enabling them to resist infection.

It is a common practice, especially among home gardeners, to sow the seed thickly and allow the plants to develop without pricking out. Such close spacing produces a tall, spindly growth, and the lack of sun and of air movement between the plants is very conducive to the development of such troubles as leaf spot, blight, and seedling wilt disease.

Spray With Bordeaux.

In order to prevent the development of such diseases it is advisable to spray the young plants regularly with a half-strength solution of Bordeaux mixture. Spraying should commence almost from the seed leaf stage, and be continued at weekly or ten-day intervals.

As a means of controlling thrips and aphis, by which infection with spotted wilt may be conveyed,

a nicotine spray

may be combined with the Bordeaux mixture. Diseased plants should, however, be immediately removed, and if there is much evidence of disease it will be wise to make a re-sowing—much better a delayed transplanting than the setting out of any but healthy and sturdy plants.

Mr. W. Young, fruitgrowers' representative on the Sugar Enquiry Committee, addressed a largely attended meeting of the Kyabram Fruit-growers' Association early in June. Mr. Young is firmly of the opinion that the grant of £315,000 to the fruit industry will be of substantial benefit.

Southern Fruitgrowers' Association.—The annual meeting of the Southern Fruitgrowers' Association will be held at the Rialto, Box Hill, Vic., on July 9.

A copy of the booklet "Better Packing for Export," is obtainable free on application from the Gerrard Wire Tying Machines Co. Pty. Ltd., 119-125 Hawke-street, West Melbourne. Attention is directed to their advertisement in this issue.

Queensland.

Banana Ballot—Banana Planting—Tomatoes and Cucumbers—Export of Apples, Pears and Grapes—Citrus News and Notes.

(By Our Correspondent.)

Banana Ballot.

THE PRINCIPAL EVENT of interest among fruitgrowers was the ballot initiated by the C.O.D. on the acquisition of all Bananas grown in the State. The necessary 60 per cent. of votes recorded favored acquisition, so we may anticipate this being given effect to.

Judging by sentiments expressed by N.S.W. Bananagrowers, it would appear that similar action is proposed voluntarily, in the absence of a Fruit Marketing Act.

Banana Planting.

Banana planting during last season was much above the average, actual figures are not available, but the acreage is estimated at about 12,000. Against this, however, deductions for lands which have gone out of cultivation (estimated 5,000 acres) must be made. The average productive life of a plantation under favorable conditions is five years, but the local conditions, including pests and diseases, reduce this by almost half.

Tomatoes and Cucumbers.

In the northern part of the central district, from whence the main supplies of Tomatoes and Cucumbers are sent to southern capitals, weather conditions, unlike other coast lands, have been decidedly dry, consequently planting was limited and cropping is light. Late planting is satisfactory so far as growth and productivity apply, but the financial prospect offers poor inducement.

Ordinarily the districts served by the port of Bowen are not humid, consequently "blight" is rarely present amongst Tomatoes, but this season the absence of rainfall is considered a record—under 15 inches being recorded since January 1, whilst further north up to 100 inches have fallen.

Fruit Markets.

The fruit markets are over-supplied with fruit, both local and southern, but a falling off in the local Orange crop can shortly be expected Southern fruit is of good quality, though many of the Apples of standard varieties are distinctly on the small side.

Export of Apples, Pears and Grapes.

Reports received concerning small trial consignments which have increased from 200 cases of Apples to 5,000 this year, when Pears and Grapes were also included, have been very satisfactory. England, New Zealand, Sourabaya, Canada, Singapore were the recipients. There is reasonable prospect of the development of a good export particularly as the Stanthorpe season is earlier than that of the southern States and the fruit is at least equal in most respects and superior in others.

Citrus News and Notes.

The marked fall in prices of citrus fruits does not permit of any extravagance in the orchard, and growers are concerned regarding the prices of spraying materials which are quite out of proportion to other orchard requirements, though the cost of appliances for spraying have been on the up-grade for a long time.

Fertilisers seem to have a perpetual tendency to increase. The C.O.D. has recently made some investigations which plainly evidence that we are over-handicapped in this direction, with the result that in addition to introducing requirements in this line efforts are being made to secure the whole of the output from Swift Meatworks recently acquired by the Government.

QUEENSLAND FRUIT IN MELBOURNE.

Mr. C. G. Parnell, the Melbourne representative of the Committee of Direction of Fruit Marketing, advises as follows:—

The total tonnage of Queensland fruit which arrived in Melbourne during May, was 1,966 tons, consisting of sugar, Ladyfinger and Cavendish Bananas, Pineapples, Mandarins, Grapefruit, Papaws, Custard Apples, Rosellas, Beans and Tomatoes.

The Rosellas which arrived on this market met with a fair demand, as many interstate travellers relished the taste of this delicious jam.

The Pineapple position at present is very serious owing to the canning factories not yet operating in Queensland, but it is hoped that as Mr. Ranger, the manager of the Committee of Direction, has disposed of 150,000 cases of preserved Pineapples in England and Canada, and has made tentative arrangements for the disposal of some of the next years' crops, the position will be relieved.

The warm winter being experienced in Queensland is causing the Pineapples to ripen very quickly, and growers cannot hold same on the plants. Prices at the beginning of the month were good from the growers' viewpoint, but at the present time Pineapples are being sold at a loss on the cost of production, very cheap rates prevailing.

The Banana market at the beginning of the month was very low, due to the large supplies of local fruit, and to the fact that there was an excessive amount of rust-affected fruit in the consignments. Values were low, and rust-affected fruit was being sold at a loss. Towards the end of the month the supplies diminished, and also the quantity of rust-affected fruit lessened, resulting in the Banana market turning to payable prices.

There are fair supplies of beans coming to hand which are meeting with fair demand, but as there are still considerable local vegetables on the market, it is not expected that the position for beans will improve for some time to come.

The Custard Apple season has finished comparatively early, and at the present time there are no Custard Apples on this market.

PROCESSED PINEAPPLE SOLD.

The Queensland Committee of Direction of Fruit Marketing, on June 22, received a cable message from Canada from its manager (Mr. W. Ranger) stating that he had sold 150,000 cases of processed Pineapple. This order, it is stated, will clear the remaining stocks of the export pack.

The news of this sale has been received with appreciation. It is expected this sale will clear the way for the entire disposal of the accumulated stocks, thus enabling the factories to go ahead with processing the winter crop of Pineapples. At the present time the prices of Pines are too low—7/- to 8/- per case in the Melbourne market.

BANANA BALLOT.

Growers Vote for Acquisition by C.O.D.

On the ballot of Banana growers on the question of whether all Bananas grown in Queensland from June 6 this year to December 31, 1934, should be acquired by the Committee of Direction for Fruit Marketing. The voting was as follows:—For acquisition, 1,248; against, 798; informal, 66. Majority in favor, 450.

The Committee of Direction has made application to the Government to-day for the necessary Order in Council to give effect to the vote.

QUEENSLAND.

Brisbane (22/6/31).—Oranges, Queensland Navels, 5/- to 7/- case; extra special, 8/-; Queensland Oranges, 3/- to 5/-; few at 6/-; Mandarins, Glens, special 9/-, others 5/- to 7/- case; Scarlets, 5/- to 7/-; Emperors, 3/- to 5/-; Feutrels, 3/- to 5/-; Thorneys, 3/- to 5/-; Lemons, 3/- to 4/-; Grapefruit, 3/- to 5/-; Tasmanian Apples: Jons., 8/- to 10/-; G. Smith, 9/- to 10/-; S.P.M., 6/- to 8/-; Demos., 9/- to 10/-; S.T.P., 6/- to 8/-; F.C., 9/- to 10/-; G.F., 7/- to 8/-; Hoovers, 7/- to 8/-. Pears, W.C., 9/- to 11/- case; G.S., 8/- to 10/-, other classes from 7/- to 10/-. Apples from N.S.W. (of the G. Smith class), from 12/- to 13/- per case; eating Apples from N.S.W., 7/- to 10/-; Passionfruit, 2/6 to 6/- case; Papaws, 2/- to 3/- case; Custard Apples, 2/- to 3/- case; Vic. Apples: Jon. choice, 10/- to 11/-, others 3/- to 8/-; Bunc, 8/- to 8/6 per case; F.C., 7/- to 9/-; Vic. Pears, P.T., 10/- to 11/-; B.P., 6/- to 8/-; Pines, smooth, 2/- to 4/- per case; Ripleys, 4/- to 5/6 per case.

APPLE EXPORT.

Queensland Grower Wins Orient Company's Prize.

THE SPECIAL EXPORT APPLE competition inconnection with the Royal Easter Show, Sydney, resulted in a win for a Stanthorpe (Queensland) grower.

The rules provided that four cases (two each of two distinct varieties suitable for export) were to be submitted. One of each variety was judged at the show, and the remainder were forwarded to London and judged there. Three prizes of £10, £5, and £2 were offered by the Society, and, in addition, a silver cup valued at £25 was presented by the Orient Steam Navigation Co. Of the 39 entries received, 35 were actually submitted.

The awards were:—D. G. T. Gow, Stanthorpe, Queensland (Granny Smith and Dunn's), 183 points, 1; W. Hickmore, The Summit, Queensland (Granny Smith and Dunn's), 181½ points, 2; D. E. Mitchell, Liddleton, Hartley, N.S.W. (Granny Smith and Dunn's, and P. E. Thompson, Ardrossan, Batlow, N.S.W. (Granny Smith and Tasma), 181 points each, 3.

Reporting on the judging in London, Mr. E. G. Munro, the judge, stated that Mr. Gow had been awarded full marks, and that his Apples were the finest he had ever seen. There was not a blemish on a single Apple, the fruit was perfectly packed, and the whole get-up was admirable.

Mr. Monro added that in a number of instances exhibitors had evidently paid very little attention to packing. It was so bad in some cases that no points were awarded under this heading.

CLENSEL—A POPULAR SPRAY.

Insecticide and Fungicide: also Fruit-fly Lure.

The value of "Clensel" as a general purpose spray and fruit-fly lure is officially recognised in Western Australia. The Government entomologist, Mr. L. J. Newman, after careful tests, recommends "Clensel" as an effective fruit-fly lure. Other recommendations by the Government entomologist are as follows:—

For green Tomato bug, if in pre-wing stage, spray thoroughly with one part "Clensel" to 100 parts water; if winged adults are present, use one part "Clensel" to 60 parts water. Fruit-fly traps, Rose aphis, black aphis, mealy bug and thrip on Carnations, scale and mildew: one part "Clensel" to 30 parts of water. For red mite on vegetables: one part "Clensel" to 40 parts of water. Pittosporum bug and plant-feeding mite: one part "Clensel" to 20 parts water. For tobacco plant pests: one part "Clensel" to 25 parts water.

"Clensel" is a British product, and for the last thirty years has been used throughout India, Canada, New Zealand and other parts of the world. It first came to Australia in 1927.

"Clensel" is a non-poisonous, non-injurious and non-inflammable product. It is a vegetable oil base containing ammonia, citronella oil and resin. It is a contact spray with excellent emulsifying and healing properties. Being of a non-poisonous nature it can be used with perfect safety on fruit and vegetables, and is quite harmless if consumed by human beings.

Recently a test was made to check the dried fruit grub. After spraying with "Clensel," it was noted that the grubs did not develop, and further, when eating the fruit there was no difference whatever in the taste. Mr. Bruce Anderson, the Australian distributor, reports equal efficiency by using "Clensel" on Dates. These experiments were carried out in Glasgow. "Clensel" killed the grubs, destroyed the eggs and left no bad taste.

As "Clensel" is an ovicide, it is recommended to spray at the strength of 1 in 25 immediately after pruning. "Clensel" has a healing and cleansing effect. Then, when growth commences, spraying could be continued at the strength of 1 in 60.

Tomato Bug.

A Western Australian farmer recently submitted a cluster of eggs which he stated he found on a young Tomato bush, and asked if they were injurious to the plants.

Answer: Mr. L. J. Newman, Economic Entomologist, advises that the eggs submitted are those of the green Tomato or Bean bug, Nezara viridula. These eggs are always laid in masses of from 80 to 100. The young bugs, when they hatch out, remain clustered until after the first moult, when they scatter to all parts of the plant. This pest is very damaging to Tomatoes, Beans and many other garden plants.

When numerous, being sap suckers, they soon cause the plants to wilt and die. Treatment: Pick off all egg masses and destroy. Spray thoroughly with "Clensel." If in pre-winged stage, use at a strength of one part to 100 parts water. If winged adults are present, use at one part "Clensel" to 60 parts water. After each moult, this bug appears in a different color, until finally, after the fifth moult it appears with wings and is foliage green in color.

Fruitgrowers, gardeners and farmers in other parts of Australia speak appreciatively of "Clensel." The Australian distributor is Mr. Bruce Anderson, of 54a Hoddle-street, Abbotsford, Victoria.

Agents have been appointed for the several States.

South Australia.

South Australian Fruit Marketing Association.

AT a Committee meeting of the S.A.F.M.A., held on May 29, there were present: Mr. H. J. Bishop (Chairman), Messrs. H. N. Wicks, R. B. Pritchard, M. G. Basey, J. S. Hammat, E. W. Dearman, R. O. Knappstein, D. W. Hannaford, J. B. Randell, R. Willsmore, G. A. W. Pope, G. W. Selth, P. R. B. Searcy, and Secretary. Apology from Mr. F. B. James.

Rough Handling of Fruit.—Letter written to the agents of the s.s. "Hobsons Bay," copy of which had been sent to the Secretary of the Overseas Transport Association, and to Mr. G. Quinn, was read by the Secretary, together with replies received from the manager of the Aberdeen and Commonwealth Line (enclosing report from the Marine Surveyor), Mr. G. Quinn, and Mr. E. C. Harvey.

Cases.—Mr. G. A. W. Pope submitted correspondence with the Minister of Agriculture and the Conservator of Forests in regard to timber for fruit cases for the coming season, and it was unanimously resolved by the Committee that the measurements hereunder:—

Ends (each 1 piece), 2/11½ x 10½ x ⅝ inch.
Sides (each 1 piece), 2/19¼ x 10¼ x 5/16 inch.
Tops and bottoms (each 2 piece), 4/19¼ x 5½ x 3/16 inch.
Cleats, 4/11 x ⅝ x 5/16 inch.

are the minimum in regard to cases , and timber that would be acceptable to the Association, and the Association will only recommend one-piece sides, either one-piece timber or cleated. The general opinion was that Australian timber should be used if possible.

Mr. Bishop submitted a sample case which was considered by members one of the best they had seen.

Freight Agreement.—Telegram received from Mr. J. B. Mills, stating he was attending the Conference in Sydney on June 4, re freight agreement, and asking if this Association would be represented. After discussion, it was resolved that Mr. J. B. Mills, Vice-President, of the Victorian Fruit Marketing Association be asked to represent this Association at the Conference, with authority to vote on our behalf, and that the Association support the Victorian action.

The Secretary to advise Mr. Harvey, Secretary, Export Oversea Transport Committee, that Mr. J. B. Mills would represent this Association at this Conference.

Trade Report.—Copy of report received from Department of Markets in connection with Australian prospects in the East compiled by Mr. W. Ranger was laid on the table.

Uniformity of Fruit Inspection.—Mr. M. G. Basey advised that Mr. F. B. James had asked that the Association should discuss the question of obtaining uniformity in regard to inspection of fruit. Is was resolved that the matter be placed on the next agenda.

Research Committee.—Mr. H. N. Wicks reported on the work of the Research Committee, and advised that it had been decided to inaugurate stock tests at the Blackwood orchard, and the Committee was endeavoring to carry out at least six experimental manurial tests with a view to increasing crop results.

The Committee was also taking up the question of codlin moth control, and they also ask for suggestions for investigation in any direction which might be of assistance to their growers.

It was unanimously resolved that the Association should donate a sum of £10 for providing manures for carrying out tests, approved by the Research Committee. The records to be available to members in due course for their information.

Pear Shipments.—Resolved the Secretary write the Victorian Fruit Marketing Association, asking for information in regard to the most satisfactory method of packing and style of cases, and any other data that might be useful for members in regard to Pear shipments for the past season.

Finance.—Financial statement showing balance in bank, £280/0/9, was received.

Waikerie.

A citrus field day, conducted by the local branch of the Murray Citrus Growers' Association, was held at Waikerie (South Aust.) in mid-June. Visits were made to the orchards of Messrs. A. H. Headland, E. A. Stephens, C. and G. Kerr, T. Dunstan & Sons, E. A. Everett, and A. R. Isaacson

Many questions were asked at the various orchards visited, and growers were able to compare the various methods followed All the orchards were showing good crops. As many as 5,000 stakes were used on one orchard to lift the fruit off the ground.

Various pruning methods were noted, but the main style adopted was the thinning out of the inside and cutting out of all dead wood.

Conference of Agricultural Bureaux.

THE ANNUAL CONFERENCE of River Murray branches of the Agricultural Bureau was held at Renmark (Sth. Aust.) in mid-June, the opening address being delivered by Prof. A. J. Perkins, Director of Agriculture.

A report of the pruning trials carried out at Berri was given by Mr. F. R. Arndt (District Horticultural Instructor), and Mr. F. H. Metters spoke on the marketing of citrus fruits.

Among those present were:—Prof. A. J. Perkins (Director of Agriculture), Messrs. Geo. Quinn (Chief Horticultural Instructor), H B. Barlow (Chief Dairy Instructor), C. F. Anderson (Government Poultry Expert), R. L. Griffiths (District Agricultural Instructor), N. S. Fotheringham (Manager, Berri Orchard), J. B. Harris, E. Leishman, F. R. Arndt, and H. Berriman (District Horticultural Instructors), H. C. Pritchard (General Secretary), F. C. Richards (Assistant Secretary of Agricultural

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Bureau), A. V. Lyon, M.Sc., Merbein Research Station. After lunch addresses were scheduled by Messrs. Lyon and C. F. Anderson, and a series of questions to be answered by Mr. Quinn. Professor Prescott gave an address in the evening session on the "Soil and Soil Problems of the River Murray Irrigation Areas." Mr. H. S. Taylor, a member of the State Advisory Board, was presented with a clock and fountain pen in recognition of his great services.

SOUTH AUSTRALIA.

Adelaide (19/6/31).—Apples (eating), 8/- to 9/- case; do. (cooking), 7/- to 9/- case; Bananas, 24/- case; Grapes (dark), 8/- case; do. (white), 7/- case; Lemons, 5/- to 6/- case; Oranges (Common), 4/- to 5/-; do. (Blood), 5/- case; do. (Mandarins), 7/- to 9/-; do. (Navel), 6/- to 9/-; do. (Poorman), 5/-; Pears (eating), 8/- case; do. (cooking), 5/- case; Persimmons, 4/-; Pineapples, 16/-; Pomegranates, 4/-; Quinces, 5/- case.

CITRUS GROWERS.

World Conference Proposed.

Why Not Hold It in Australia?

THE WORLD ASPECT of citrus growing is one that must now engage the attention of thoughtful producers in all countries.

On the subject being mooted by Mr. Bruce McDaniel, editor of "Citrus Leaves," much interest was aroused.

The "Fruit World" believes that such a conference would be of very great importance to the industry and have a stabilising effect. From the advertising point of view the benefits would be very great indeed.

Support from Western Australia.

Support for the idea of holding the conference in Australia comes from Mr. R. S. Sampson, M.L.A. (member of Swan). Mr. McDaniels' reply to Mr. Sampson, published in the "Farmer," states:—

"The holding in Australia of the conference would meet with my approval. If you believe it feasible, kindly let us know if Australia would sponsor the gathering."

* * * * *

Citrus men are urged to give this matter their best and most favorable attention.

We need to have a big vision.

CLEAN-UP FRUIT-DRYING TRAYS NOW.

THE THOROUGH CLEANING and mending of drying trays at the end of the season is a matter that does not often receive the attention it should in fruit-drying districts. It is easier to turn out a good dried article, especially in the case of Apricots and Peaches, if the trays are clean than if the remains of overripe fruit or juice still adhere to the wood.

It does not take a great deal of time to scrub drying trays, and few growers have more than a few hundred of them, and if this practice is followed the trays will be kept in better order.

The dip tank with the water warmed up to a heat in which one can place the hands with comfort will be found a useful means of cleaning up the trays, and the addition of half a kerosene tin of gypsum to the water will take a lot of the soda lye out of the wood and leave the trays whiter and less splintery than if caustic soda is used.

NEWS AND NOTES.

Lower freights and better carriage of fruit from Hobart to Brisbane are requested by the Tasmanian State Fruit Advisory Board.

* * * * *

The Research Committee, Victorian Fruit Marketing Association, has issued a pamphlet setting out seasonable helpful hints for growers.

* * * * *

The value of advertising Australian fruit in England is recognised. Concern is felt because of certain withdrawals which may endanger the programme.

* * * * *

Vine and fruit tree pruning competitions were held in various parts of the Murray Valley during June. These created great interest, and much helpful information was disseminated.

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The improvement in the pack of Tasmanian Apples is favorably commented on from London.

* * * * *

Citrus fruits are being marketed freely: the quality generally is now good. Early in the season the market suffered because of the disposal of immature Oranges artificially colored.

* * * * *

The Oriental Peach moth is a serious menace in the Goulburn Valley. The pest has also spread to the southern districts. Special efforts are being made by the Division of Horticulture to combat the pest.

* * * * *

The trouble is that the larvae of the Oriental Peach moth (which many have mistaken for the codlin), cannot be poisoned, because the grub spits out or vomits any poison sprayed on the skin of the fruit.

* * * * *

The Victorian Fruit Council has been successfully launched. Six associations have joined.

* * * * *

An important interstate conference is to be held at Melbourne in mid-August. This is the meeting of the Australian Apple and Pear Export Council, which every Australian State has joined.

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The Tasmanian State Fruit Advisory Board is seeking legal advice with regard to a proposed test case regarding growers receiving the full benefit of the exchange rate.

* * * * *

The ballot in Queensland resulted in 61 per cent. of the votes being in favor of the acquisition of the Banana crops by the Committee of Direction of Fruit Marketing.

Consign your Fruit to—
J. JAEGER
Telegrams: Jaegagento, London.
FRUIT IMPORTER
18 Bedford Chambers, Covent Garden
London, W.C.2.,
and compare the results with those of the competition.
Try and See.
AGENTS REQUIRED.

New Zealand sent 1,351,000 cases of fruit overseas in the 1931 export season.

* * * * *

Heavy fines were inflicted in the Mildura Court on persons illegally trading in dried fruits.

* * * * *

Tobacco is now being cultivated in some Australian fruit districts.

* * * * *

Plant breeders are at work in New South Wales to improve Cherry varieties.

IMPERIAL FRUIT SHOW.

Australian Prize Winners.

Although the exhibits in the southern hemisphere section of the Imperial fruit show were not numerous, quality and appearance made up for lack of numbers, and highly pleased the judges and the numerous critical spectators.

Awards.—Jonathans. W. S. Cripps, Mount Victoria, N.S.W. Cleopatras: W. H. and D. F. Calvert, Huon, Tas. Sturmers: W. H. and D. F. Calvert, 1; H. E. Stephens, Stoke, N.Z., 2; J. A. Fraser, Mahana, N.Z., 3. Granny Smiths: G. Simpson, Karragullen, W.A., 1; W. H. and D. F. Calvert, 2; H. Lake, Bridgetown, W.A., 3. Other Dessert Apples: Illawarra Orchard, Karragullen, W.A., 1; J. B. Savory, Upper Beaconsfield, V., 2; W. H. and D. F. Calvert, 3. Dunn's: E. G. Hall, Bridgetown, W.A., 1; G. Simpson, Karragullen, W.A., 2. Other Culinary Sorts: W. H. and D. F. Calvert.

"Elephant" brand prepared red oil, is advertised in this issue by Messrs. Jaques Pty. Ltd., of Madden Grove, Burnley, Vic. For list of interstate agents, see their advertisement.

* * * * *

Messrs. L. P. Rosen & Son, Carlingford, N.S.W., are now booking orders for all kinds of fruit trees, including citrus. Messrs. Rosen & Son also specialise in fruit trees, Rose plants, etc. Catalogue is obtainable free on application.

* * * * *

Attention is directed to the advertisement in this issue of Messrs. Trewhella Bros. Pty. Ltd., of Trentham, Victoria, wherein is given a description of the Monkey grubber and its uses.

MELBOURNE FRUIT AND PRODUCE TRADE.

Undesirables at Victoria Market.

RELIABLE MERCHANTS at the Queen Victoria Markets view with concern the tactics of certain individuals who have for years imposed upon growers of fruit, also Beans and Peas by sending out circulars to market gardeners and fruitgrowers canvassing for consignments, and when they have disposed of the goods, forgotten to forward cheques in payment. The matter was mentioned in the State Parliament recently and several individuals were named.

According to some of the merchants who sell on behalf of growers at the market, there is still room for improvement, and a general clean-up is necessary in order to rid the markets of undesirables.

Growers are themselves to blame for allowing themselves to be imposed upon, for there are reliable salesmen advertising in the "Fruit World" who can be depended upon.

VICTORIA.

Melbourne (26/6/31).—The Wholesale Fruit Merchants' Association reports prices as follows:—Apples, best eating and cooking, to 7/-, few specials 8/-. Bananas, Queensland, green, 9's and 8's, 15/- to 16/-; 7's, 12/- to 14/-; 6's, 9/- to 11/- per double case; selected fruit for country trade higher; rust-affected lines lower. Grapefruit, 5/- to 7/-. Lemons, 3/- to 5/-. Navel Oranges, 8/- to 9/-, few special wrapped to 10/-; Shaddocks, 5/- to 7/-; Mandarins, 5/- to 7/-. Papaws, 7/- to 10/- (some 11/-) per double case; green unsaleable. Pineapples, 6/- to 7/- per double case. Passionfruit, 8/- to 10/-, few specials 11/-.

The Melbourne market manager of the Federal Citrus Council of Australia (Mr. Kitchin-Kerr) reports on June 26, as follows:—

Supplies of Navels lighter during the week, heavy rains interfering with picking. Apart from the comparative shortage there was a better demand for all lines, and particularly for the smaller counts, 168-182, and prices generally showed an increase of 1/- to 2/- on those ruling at the beginning of last week. These prices should be maintained for good standard packs. There is a

Fruit Shipments
United Kingdom
and the Continent
W. D. PEACOCK
& CO.
London Fruit Exchange,
Spitalfields, London, E.1.
AND HOBART, TASMANIA
Solicit Consignments
The High Standing and Long Experience of this Firm is a Guarantee that the Best Interests of Consignors will be conserved.

F.W.Vear PTY. LTD.
Fruit & Vegetable Salesmen
Commission Agents
28 New Wholesale Fruit Market,
Melbourne, Victoria
Highest Market Rates Assured
Prompt Settlements

"YARRA"
QUICK BREAKING
White Oil Emulsion
Easy to mix, Effective in result,
Economical in quantity.
Use Now
On Citrus Trees.
PARSONS & JAQUES
Manufacturing Chemists,
6 Patterson St., 155 Yarra St.,
Abbotsford, Vic.
Tasmanian Agents—
N. L. HOPKINS, HOBART.

Sulphate of Ammonia

WESTERN AUSTRALIAN TESTIMONY

Mr. S. E. Hambley, of Mount Barker, Western Australia, writes as follows:—

"I have an orchard composed of 900 apple trees, and two acres of mixed stone fruits. On these I make a practice of applying 2 lbs. per tree of Sulphate of Ammonia in conjunction with Super and Potash, and I have no hesitation in saying that the Sulphate of Ammonia is the most important portion of the fertilisers applied. Two acres of Dunn's Seedling, 1929 season, yielded 928 cases of Standard Export Fruit.

"I also use Sulphate of Ammonia on my oats, peas and kitchen garden crops, and the vigour and yield demonstrates always the value of this fertiliser.

"You are at liberty to use this letter as you feel disposed."

Evidently Mr. Hambley, like many primary producers throughout Australia, knows a good thing when he sees it, and is satisfied that ——

SULPHATE OF AMMONIA PAYS

Literature and Advice from:—

NITROGEN FERTILISERS PROPRIETARY LIMITED,
360 Collins Street, Melbourne,
or Box 235, Haymarket, Sydney.

limited demand for Mandarins, but some lines are not clearing at good prices owing to the big proportion of large sizes or to their being of lesser known varieties. The market is fully supplied with Grapefruit.

Sales were as follow:—Navels, average standard, unwrapped, Victorian and M.I.A., 75, 5/-; 84, 6/-; 96-112, 7/-; 126-182, 8/-; a few selected unwrapped lines, 6/- to 9/-; selected standard wrapped lines, 7/- to 10/-; with odd sales to 11/-. Lemons, 3/- to 6/-; Grapefruit, 60-75, 7/- to 9/-; other sizes from 5/-; Mandarins, easier, 6/- to 8/-; few selected lines higher; Commons to 5/-.

The Lemon Situation.

The factory position with regard to Lemons is still obscure, and definite information under this heading is not likely to be available until July. Growers are recommended not to lose any opportunities of favorable sales on the case market, even at the low ruling prices. Whether they propose forwarding immediately or not, they should go over their trees at frequent intervals, picking the Lemons, irrespective of color when they attain a diameter of 2½ inches, and holding and curing green ones. As endeavors are being made to extend the market for citrus generally, growers who have or who are likely to have on hand any quantity of good cured Lemons guaranteed free from scale and of good quality suitable for export, should communicate with the V.C.C.A., Collins House, Melbourne, immediately.

RETAIL FRUITERERS' ASSOCIATION.

The annual meeting of the Melbourne & Metropolitan Retail Fruiterers' Association was held on May 21, and the attendance of members was the largest since the formation of the Association. The report and balance-sheet presented showed that the Association is in a sound financial position, with a membership of almost 1,000 financial members. The Secretary and Auditors were re-elected, and Mr. Sapwell, of Glen Iris, Mr. Kruse, of Ascot Vale, and Mr. Nutt, of Williamstown, to represent those districts respectively on the executive.

A presentation was made to the retiring President (Mr. Judd) during the meeting, and in responding the ex-President made special reference to the success of the picnic, and the great amount of work accomplished during the year in the interest of the retail trade, and also to the good attendance and untiring efforts of the executive members to assist him during his term of office. Many matters were also suggested to the incoming executive for attention during the year.

The first meeting of the new executive was held on June 4, and there was again a full attendance. Mr. J. L. Brown was elected President, Mr. A. E. Miller, Vice-President, after a very close contest, and Mr. C. Mawdsley, Treasurer. The newly-elected officers, in thanking delegates for their election, promised to do all in their power to maintain the high reputation set them by their predecessors, and trusted that by united efforts many reforms would be accomplished. It was also decided to enlist the services of the City Council Inspector, with a view to further action to compel vendors to put the correct weight in packages of produce sold at the Victoria Market.

Comments on Trade During the Month.

Needless to say there has been no improvement during the month, vegetables of most varieties are still plentiful and prices reasonable. The weather being cold has not been very conducive to the sale of fruit, the price of which is very low, with the exception of good cooking Apples, which command a fair price.

Immature Oranges and Grapefruit.

As I stated last month, there is a considerable quantity of Oranges and Mandarins on the market which would be better on the trees until properly matured. This class of fruit discourages the public from purchasing, thereby the growers suffer loss as well as the retailer. The same remarks apply to Grapefruit, a large percentage of which are totally unfit for consumption at present as a desert fruit, and there is practically no preserves whatever being made at present. The purchasing power of the public is so limited that it is imperative nothing should be marketed to retard what little business there may be.—E. W. Thompson, Secretary Melbourne & Metropolitan Retail Fruiterers' Association.

QUEENSLAND BANANAS.

Following the vote in Queensland favoring the acquisition of the Banana crop by the C.O.D., it is anticipated that a system of accredited agents will ensue.

The rumor that the C.O.D. was organising a sales floor in Melbourne to have a monopoly of the Banana trade has been denied.

Two Queensland growers, Mr. A. E. Maher, of Cooran, and Mr. K. Hack, of Merang, visited Sydney at the end of June and will be in Melbourne early in July to go into details with the Wholesale Fruit Merchants with regard to details of trading.

* * * * *

Swift's arsenate of lead is stated to secure the maximum of clean fruit at the minimum of expense. There are agents in all States, a list of whom are given in Swift's advertisement.

Margetson & Co. Ltd.
Fruit Importers and Salesmen
30 James Street and James Street Warehouses.
11 Neal Street,
COVENT GARDEN, LONDON, W.C.,
and at Jamaica House,
9 and 10 Botolph Lane, London, E.C., and
56-58 Stanley Street, Liverpool.
Sales by PRIVATE TREATY.
Prompt Returns and Settlements.
Tel Add.:—FRUTERO, LONDON.
MARGETSON, LIVERPOOL.
Head Office:
Covent Garden Market, London, W.C.
Bankers:
Lloyd's Bank Ltd., Law Courts Branch, Strand, London, W.C.
Shipping Nos.: 431 and 432.

MONEY IMMEDIATELY AVAILABLE.
FROM LOWEST CURRENT RATES.
£25 up to £250.
Extended Monthly Repayments
NO COMMISSION
SPECIALTY INVESTMENTS PTY. LTD.,
89 Collins St., Melbourne, C.1. Cent. 2643.

Tobacco Culture.

This Crop is Now Being Grown in Fruit Districts.

Helpful Seasonal Hints.

Now is the Time for Preparation for Seeding.

(By R. C. Scott, Supervisor of Experimental Work, and S. B. Opie, Field Officer, S.A. Dept. of Agriculture.)

THE AREA UNDER TOBACCO in Australia has fluctuated very considerably during the 75 years in which this crop has been cultivated. To-day it is essential that light colored, mild smoking flue-cured tobacco must be produced in order to become saleable. That there is ample room for expansion in this industry, provided that quality leaf is secured is indicated by the following figures showing the production and consumption of tobacco in Australia for the year 1928-29. In this year the tobacco imported into the Commonwealth amounted to 23,072,691 lbs., whilst that produced totalled only 1,808,160 lbs. Australia produces from 8 to 10 per cent. of its requirements for tobacco. There is little doubt that Australian leaf possesses characteristic flavors and aromas, for which smokers have quickly acquired a liking. This augurs well for the future, and there is every reason to anticipate rapid and successful development of the tobacco industry in Australia.

Varieties.

Botanically the varieties being grown in Australia belong to the species Nicotiana tabacum. They may be divided in two types, namely, Broad-leafed Virginian and Burley. Both of these are suitable for the manufacture of light plug and cigarette tobacco. The Virginian type is the more popular. It suits the majority of our tobacco soils, and is fairly hardy. It is usually flue-cured.

The Burley type, when grown in other parts of the world, is largely air-cured. It is used for the production of characteristic brands of tobacco, such as Temple Bar, Edgeworth, etc. It possesses the advantage of producing good colored leaf even when grown on heavy and more fertile soils. Whilst not largely grown as yet, it appears to us to be a valuable type for many of our South Australian soils, and one which every grower should test on his class of tobacco land.

Amongst the best Virginian varieties are:—

Warne.—Probably the most widely grown in this State and suited to lighter soils.

White Stem Orinoco and Little Orinoco.—Good varieties which yield bright, fine quality leaf when grown on medium to light class land.

Hickory Prior.—A good quality tobacco for soils slightly heavier in type.

Numerous other varieties have been tested, and the following may be listed as being satisfactory:—Adcock, Broad Leaf Gooch, Big Orinoco, Cash, Conqueror, Dungowan, Golf Leaf, Hester, Jamaica, Lacks, Long Leaf Gooch, Spotted Gum, Yellow Orinoco, Yellow Prior.

Burley tobaccos of promise are:—Judy's Pride, Standing Resistant, Station Stand Up, Vimond Kelly, and Kelly.

These varieties are suited to the richer soils or land containing more clay than that recommended for Virginian tobaccos. They color up well in the field, but are rather susceptible to disease and insect attack.

Position of Tobacco in Rotation.

Tobacco is not a particularly exhausting crop, and provided it is adequately manured, may be continuously grown on the same piece of land until disease pests, or fouling renders a change of crop necessary. Continuous cropping is largely adopted in some countries but is not to be recommended for our conditions. At times a second or even a third crop may be removed from the same piece of land in successive seasons, without danger, but if possible a rotation should always be planned.

Tobacco does not follow potatoes with advantage, because this crop tends to deplete the land of potash, an important plant food for tobacco. It should preferably be preceded by a leguminous crop in order that the soil be well supplied with humus, but in such case it is essential that all organic matter be ploughed under several weeks before planting, and so become thoroughly decomposed.

In the Adelaide Hills districts it is recommended that the tobacco crop should be followed by Subterranean Clover and left down to pasture for at least one season.

Manures and Manuring.

Tobacco needs to be liberally but judiciously fertilised, as excess food, particularly nitrogenous, affects the quality of the leaf. The manurial requirements of tobacco can be indicated in a general way, but the actual amounts which it is economic to apply can only be determined by field experiment, and will vary within fairly wide limits. The most important plant foods are nitrogen, phosphoric acid, and potash. Lime may be included as an important soil amendment, as tobacco does not make good growth in sour soils.

The fertilisers, phosphoric acid, nitrogen, and potash are available from manufacturers in the form of a complete fertiliser. The percentages of each will vary according to the purpose for which it is intended, and for tobacco the combination may include:—8 to 12 per cent. phosphoric acid, 3 to 6 per cent. nitrogen, 2 to 6 per cent. potash.

The phosphoric acid is usually present as superphosphate, the nitrogen as nitrate of soda, sulphate of ammonia, or dried blood, and potash as sulphate of potash.

A complete fertiliser on the market in this State, and recommended for use in applications of from 7 cwt. to 10 cwt. per acre, has the following analysis:—8 per cent. phosphoric acid (17½ per cent. water soluble phosphate), 2 per cent. nitrogen, 5 per cent. potash.

Before commencing sowing, the seedbeds should be boarded round with timber, preferably about 1 ft. in height, on which the protective coverings will be placed. The area of seedbed required will need to be determined. In this connection, provision should be made for twice, or even three times, the area necessary to supply seedlings for a single planting. The young plants must be in the correct stage of development at transplanting time. Transplanting may extend over several weeks, because of unseasonable or other causes, and if only one seeding is made the late-sown plants are too old for best results. Therefore, three seedings each sufficiently large to supply plants for the whole field is strongly recommended. Each should be spaced at intervals of 12 to 14 days, so that good plants will be available over a period of six to seven weeks. This allows for good selection for filling misses, and is a safeguard against such accidents as frosts or disease wiping out the earlier sowings.

In the Adelaide Hills, September is the usual seeding month, the first sowings taking place in late August, and late sowings towards the end of September or early October. Occasionally even later sowings may prove satisfactory, but are not advisable.

Tobacco seed is extremely small, and approximately 1,000,000 would be required to weigh 3 ozs. However, their fertility is low and only 60 to 70 per cent. are capable of germinating. With satisfactory seedbeds, 1 oz. will provide sufficient seedlings for about seven acres of land. An area of 100 square feet of seedbed is required per acre of land intended for planting. This necessitates one-seventh of an ounce, or one teaspoonful of tobacco seed. When seeded at this rate, the plants are well spaced and strong seedlings provided, whereas thicker seeding causes much additional work in thinning out, if weak, spindly plants are to be avoided. In sowing, the seed is mixed with a liberal quantity of some medium, such as ashes, pollard, sand, etc., so that the small quantity required may be spread evenly over the surface.—S.A. Journal of Agriculture.

H. WILSON
Wholesale Fruit Merchant and Commission Agent,
No. 10. New Wholesale Fruit Market., Melbourne.
Accredited Agent for Victorian Central Citrus Ass'n.
Bankers.—National Bank of Australasia (Western Branch), Melbourne.
City Telephone: F 6444. Private Phone: M 3055.

Tasmanian Apples
Orders for Apples carefully handled and undertaken for all Overseas & Interstate Markets.
E. R. COTTIER Pty. Ltd.
Temple Place, Macquarie Street
HOBART - - TASMANIA
Tel. add. "ERCOT," Hobart.
Consignment shipments solicited on behalf of leading Fruit Brokers and Salesmen throughout England and Continent.

T. STOTT & SONS
Fruit Merchants
Established 1882
A Trial Consignment solicited from Growers in all States.
Prompt Settlement.
26 New Wholesale Fruit Market, Melbourne

Market Prices.

WEST AUSTRALIA.

Perth (18/6/31).—Apples, Dunn's, dumps 6/6 to 10/-; Romes, dumps 7/- to 8/6; Yates, dumps 6/- to 10/-, small 4/-; G.S., dumps 7/- to 12/-; Cleos., 5/6 to 8/6; Dohertys, dumps 5/- to 6/-; Statesman, dumps 4/6 to 6/6; Jons., 8/- to 11/6, small 5/-. Pears, Jos., half dumps 3/9 to 4/6; Keiffers, half dumps 3/6. Oranges, plain, flats 3/-; Navel, flats 3/- to 5/-, dumps 5/6 to 7/-; Lemons, flats 2/- to 3/6; Mandarins, flats 6/- to 8/6; Grapefruit, flats 11/6; Tomatoes,, best flats, to 13/-.

TASMANIA.

Hobart (19/6/31).—N.Y.P., 2/6 to 5/-; Demos., 3/- to 5/6; Del., 3/6 to 5/6; S.T.P., 2/6 to 4/-; F.C., 3/- to 4/6; S.P.M., 2/6 to 4/6; D.C., 2/6 to 3/-; F.P.C., 2/6 to 3/6; spotty and inferior Apples, 1/6 to 2/6 per case. Pears—W.C., 2/- to 3/-; W.N., 2/6 to 3/-; M. Pears, 1/6 to 2/6; Packhams, 2/- to 3/-; overripe Pears (dull), 9d. to 1/6 per case.

N.S.W. ORANGES FOR CANADA.

First Shipment 7,500 Cases.

The first consignment of Washington Navel Oranges, consisting of 7,000 bushels from the Yanco, Yenda, and Griffith areas, and 500 bushels from Lisarow left Sydney on June 26 by the "Niagara" for Canada.

A small quantity of Lemons was also included.

The Oranges were described by inspectors as of first-class quality and well packed. The M.I.A. consignment was packed in Californian citrus cases holding 1½ bushels.

Growers on the M.I.A. were hopeful of shipping 20,000 bushels to Canada this season, but owing to the excessive rain and the impossibility of harvesting during the wet weather, this quantity may be reduced.

UNITED BERRY-GROWERS' ASSOCIATION.

Mr. J. M. Mitchell, General Secretary, United Berry Growers' Association, reports on June 28 that heavy rain has fallen in the Wandin and surrounding districts. No factories operated last season with berry fruits, and this coming on top of the general depression, caused growers much anxiety. Growers, however, express appreciation for the assistance rendered by the Victorian Railways Department in assisting distribution, the growers doing considerable business at a profit.

Passionfruit is thought to be the coming fruit, and wherever a suitable position can be found, growers are getting ready to plant.

At the annual conference of the U.B.G.A. it was decided to ask the Government to tighten up the Act dealing with the importation of plants, as there was thought to be too great a risk of importing further pests, also that it should be regarded as an offence for agents or purchasers to retain branded crates over a stated period. Growers have suffered considerable losses in this connection.

By the present appearance of buds, Cherries are looking as if they will have a heavy crop. For this time of the year they are better than have been noted for the last thirty-six years.

* * * * *

Mr. J. M. Mitchell was nominated by the United Berry Growers' Association to represent jam-fruit growers on the proposed Committee for dealing with the sugar concession.

VEGETABLE
CULTURE

ASPARAGUS.

IN SPRING, Asparagus is one of the vegetables that is looked upon as a luxury, but the amateur who is prepared to go to a little trouble can easily grow this vegetable economically, and when once established it is no trouble to look after. It is a perennial, and the bed improves with age, lasting for a great number of years, so it can be seen that the soil preparation is of the first importance. Asparagus thrives by the sea, which is its natural home, so it can easily be seen that salt is beneficial to it. It can be raised from seed, but this is a long process: it is best for the amateur to procure three-year-old crowns, as naturally every gardener wishes to get the bed into bearing as early as possible.

The ideal soil is one of deep rich sandy soil. The best Asparagus is grown in black sand. Asparagus is a wholesome vegetable, and is a change from the usual run of vegetables.

Soil Preparation.—The first thing to see to is the drainage, and if this is not good, agricultural pipes must be laid to take away surplus water. Trenching the ground must be thoroughly done, 18in. to 24in.; if the soil is shallow it is advisable to take out some of it and replace with good soil, but thoroughly picking up the bottom and incorporating burnt garden refuse or strawy manure and working well-rotted manure in the top soil.

If the soil is heavy, wood ashes and manure will help to lighten it. This preparation should take place several weeks before planting if possible.

It is necessary to choose an open position for the bed, and the bed should be raised a few inches above the surrounding level. The method of making the bed is governed by the class of soil one is dealing with: if the soil is light the surface need only be 3in. or 4in. above the surrounding level; if heavy, 12in. will not be too much.

The advantage of raised beds is that the soil depth is greater; it assists the water to drain away quicker; it promotes warmth, which is essential to get early results in the spring.

The width of the beds is the next consideration. The huge sticks often seen in the shops can be had if plenty of room is given to the crowns, but sticks of medium size, are more serviceable for household purposes. I think, for the amateur, 3 foot beds are the best; they are easily managed, and the weeding and cutting is easily done without treading on the soil of the bed, as this might damage a lot of sticks just beginning to push through the surface, and which are not noticed. By making the beds 3ft. wide, this allows of two rows in each bed.

The crowns, as the roots are termed, should be planted 18in. apart each way, and the top of the crown should be 4in. below the surface; so it will be seen the roots are 18in. apart each way and 9in. from the edge of the bed.

Planting.—Two trenches should be taken out in the prepared bed, about six inches deep and 12in. wide; in the centre of these trenches form a ridge, or hillocks with the hands; on these plant the crowns, spreading out the roots carefully all round, and cover over with soil as soon as possible to save the roots from drying out. It is advisable to get the crowns from a good reliable source, when they will be packed in damp straw, and need not be disturbed until the actual planting takes place, and then cover over with soil as soon as possible.

Should one wish to use as much space as possible the beds can be made to take three rows; in that case, planting will be the same, also the same distances will be observed, and the width of the bed will be 5ft. instead of 3ft.

July, August and September are the three months for planting; the earlier this is done the better it is for the crowns to get established. The surface of the bed should be left loose, and should not be dug with the spade on any account; a light forking is all that is necessary.

The varieties generally used are Connover's Colossal and Early Argentine.

The first season all that requires doing is to keep the bed free from weeds, but on no account must any sticks be cut; they must be left to grow naturally to get the crowns established ready for next season.

The second season, cut sparingly. After that, it can be cut freely during the season. The time to cease cutting is governed by the season, but on the average, November is the final month for cutting, as the sticks from then must be allowed to grow, as this top growth builds up the crowns for the following season.

This top growth must be encouraged, and watered, until in the autumn, when it has completely turned yellow, it can be cut down level with the ground. When this is done any weeds may be removed and the beds lightly forked over and a good layer of manure can be placed on the surface, the paths cut out and any loose soil scattered over the beds; this leaves them tidy for the winter and the rain will wash the goodness down to the roots ready for active growth in the spring.

When cutting Asparagus, care must be exercised, as several new shoots are forming and making growth below the surface, so it can be seen damage is easily done. The knife should be pushed down as close to the stick as possible, and a half turn will serve to cut it off. It must be remembered that weeds should not be tolerated at all, as Asparagus will not thrive among weeds. Salt is beneficial when in active growth. When the first shoots appear, give a dressing at the rate of 2 ozs. per square yard, and again in three weeks' time, when 3 ozs. per square yard can be given, and again when cutting ceases. Bone and blood artificial manure is also good during the growing season.—E. F. Cook, Landscape Gardener, Caulfield, Vic.

FREIGHT TO NEW ZEALAND REDUCED.

Of Value to Citrus Growers.

Mr. S. E. Scott (Scott & Edwards, fruit exporters, Melbourne) advises that after negotiation with the Union S.S. Coy. of N.Z., the freight on fruit has been reduced from 2/9 to 2/6 per case. This reduction should prove of substantial advantage to citrus growers during the present export to N.Z. Mr. Scott expresses appreciation of the action of the Victorian Fruit Marketing Association in writing to the shipping company supporting the request for freight reduction.

— FOR SALE —

Fruit Trees.—Fig, Cape White.—This variety was specially imported by the Aust. Jam Coy. from South Africa to supersede the White Adriatic variety. 1,000 to offer. Well grown.

Weare's Nurseries
Griffith, N.S.W.

Early Cherries.

Need for a Good Variety.

Plant Breeders at Work.

The chief varieties of Cherries grown in New South Wales are St. Margaret, Early Lyons, Florence, Napoleon, Black Republican, Noble, and Early Guigne (or E. P. Gean), but officers of the fruit branch of the Department of Agriculture state that there is a definite lack of a good early kind.

Early Lyons is at present the best early variety grown, but it has many defects in the character of growth of the tree. Further, there are no good varieties ripening between Early Lyons and Florence, and a late dark Cherry with shipping qualities equal to Florence is needed, as St. Margaret does not carry well to market.

With the object of raising superior new varieties, some crossbreeding has been undertaken at Glen Innes Experiment Farm during the past season by Mr. Macindoe, assisted by the orchardist, Mr. Walker.

Early Lyons, Florence, Napoleon, Noble Riverston, and St. Margaret have been used as the female parents with many other varieties which blossom about the same time, and the resultant seed has been placed in cool storage for after-ripening. Great difficulty has previously been experienced in securing the germination of Cherry seed, but the Director of Plant Breeding (Mr. Wenholz) anticipates that the careful methods of storage now being used will give better results.

While undertaking this crossbreeding work, the opportunity has been taken to make a study of pollination problems in the Cherry. Some varieties of Cherries are known to be largely or completely self-sterile, and it is further thought that some of these are also inter-sterile with some other varieties which blossom at the same time. St. Margaret, Early Lyons, and Noble often fail to carry satisfactory crops in commercial orchards, and the results obtained with different varieties on these in artificial or controlled pollination should be therefore of much interest and value.

Messrs. Macindoe and Walker, reporting on their work at Glen Innes, state that in preliminary observations St. Margaret proved to be completely self-sterile, and that it was fertilised best by Boppard, E. P. Gean, Napoleon, and Eagle Seedling. It gave a low setting with Early Lyons and Florence.

Early Lyons was also found to be entirely self-sterile, and was found to be very well fertilised by Eagle Seedling, Napoleon, and E. P. Gean, but not well fertilised by St. Margaret.

Noble also proved to be self-sterile, but was very fruitful with E. P. Gean, Napoleon, Eagle Seedling, Boppard, and fairly so with Florence, but appeared to be inter-sterile with Early Lyons and St. Margaret.

Of the three, therefore, which tend to carry light crops, viz., St. Margaret, Early Lyons, and Noble, the varieties E. P. Gean, Napoleon, Eagle Seedling, and Boppard at least serve as very satisfactory pollinators, whilst others are doubtful from the investigations to date. These results require corroboration since they have so far only been made during one season. Napoleon was reciprocally good with St. Margaret, Early Lyons, and Noble, but the other reciprocal pollinations have not yet been studied.

The work is being continued at Glen Innes Farm.—

PERSONAL.

In recognition of his fine work for the Bureau and primary producers generally, a presentation was made by the Agricultural Bureau (South Australia) to Mr. H. S. Taylor, a member of the State Advisory Board.

The presentation took the form of a clock and a fountain pen.

Mr. S. P. Taylor, a well-known grower of Curlwaa, N.S.W., has entered upon his duties as organiser for the Murray Valley Citrus Association.

FOR YOUR WINTER SPRAYING REQUIREMENTS

Place your order immediately at the nearest Shell Depot for your Winter supplies of Shell Redspray---the outstanding dormant-period Spraying Oil on the Australian market.

If you have not received a copy of the booklet, "Profitable Fruit Spraying," The Shell Company Ltd. will forward one on request.

50.10.

ORANGES FOR CANADA.

600 Cases for Eastern Canada.

Special Treatment Process Described.

SPECIAL ATTENTION was paid to the shipment of Victorian Navel Oranges for Eastern Canada by the s.s. "Canadian Cruiser" on June 24. The fruit came mainly from Mildura district (the Big 4 Brand), and from Curlwaa (N.S.W.). 474 cases were sent in the "Californian Export" box, under the auspices of the Victorian Central Citrus Association, and 130 bushel cases from private sources: should the last-mentioned arrive safely, it is understood that large orders will be fulfilled.

The 474 cases from the Merbein and Curlwaa districts were sent in loosely filled boxes to the Government cool stores, Victoria Dock, when it was treated and packed.

The treatment consisted of washing, brushing and coating with a paraffin preparation before being packed. On being discharged from the railway truck the fruit was immersed in a 5 per cent. sodium bicarbonate solution, the temperature being 110—120 deg. F. The time for immersion was 1 to 2 minutes.

This process loosened all the dirt and foreign matter. The fruit was then taken on roller conveyors to the scrubbing brushes, after which it was again immersed in a sodium bicarbonate bath of the same strength and temperature as before; here it stayed for five minutes.

Next came the process of drying on a revolving towel dryer. In addition to the ordinary towelling provided in standard citrus packing house equipment, an additional overlying loose towel was provided, completely covering the wet fruit. It was found that this method increased the efficiency of the drying process. As the overlying towel became wet it was removed and replaced with a dry one, and so on.

On another conveyor the fruit was then taken to the revolving bristle brushes. Here it was sprayed with a light paraffin coating, this work being done with a Duco gun outfit, at a pressure of 45—50 lbs. to the square inch. The brushes spread the preparation evenly over the fruit and removed any surplus, thus giving desirable uniformity.

The next process was that of grading, a "Lightning" grader being used for this work.

The fruit was wrapped in greaseproof paper, on which was printed the "Kangaroo" brand of the Victorian Central Citrus Association. Before the final layer of fruit was placed in the case a piece of folded cardboard was inserted to prevent this top layer from pressing against the edge of the case as the fruit settled down. The packers were selected by Mr. Krone, packing instructor, Department of Agriculture. Each packer wore gloves.

Check cases are being kept of cases of fruit untreated; also 25 cases are being sent, the fruit being wrapped in sulphite tissue paper for purposes of comparison.

All this work of preparing and packing the fruit for export was under the supervision of the Citrus Preservation Committee of the Council for Scientific and Industrial Research. The fruit was packed into the "one and one-third bushel case," i.e., the standard Californian citrus export case. (This case really contains more nearly a bushel and a half.) The inside measurements of this case (clear of centre division) are 24 x 11½ x 11½. The timber was of imported softwood. All the fruit was packed to provide for the characteristic "bulge."

In addition to being wire strapped at each end, an additional piece of wire crimp banding was stretched over the bulge, being fastened to the centre division of the case.

During our inspection we were pleased to have the company of Mr. F. M. Read, M.Agr.Sc., Senior Horticultural Research Officer of the Victorian Department of Agriculture, who has closely supervised every phase of the important details of preparing the citrus for export.

The 130 bushel cases above referred to were not specially treated. News as to their condition on arrival will be awaited with great interest.

CITRUS WASHING EQUIPMENT.

New Installation at Curlwaa.

The Curlwaa Co-operative Packing Society has decided to instal a washing and sterilising plant.

It is claimed that the plant with certain preservatives added to the immersion tank would preserve the fruit from decay. The cost of the plant and installation would approximately run into £600. It is expected to have the plant ready early in July.

A prisoner who had been found guilty of an offence by the jury, was asked by the judge if he had anything to say why sentence should not be passed on him, replied: "If you send me to gaol my old grandmother will be deprived of the assistance I render."

Judge: "How do you assist your grandmother?"

Prisoner: "I hold the light at night while granny chops the wood."

FRUIT
TREES
REDUCED PRICES
GOODMAN'S
Prompt Delivery
All Leading Varieties
Healthy, well grown, reliable Trees, true to label, free from insect pests—prolific bearers in all districts.
One grower writes:—
"I think it was a very good result to have lost only one out of 730, especially as I was only a new hand at the game. I hope I have as good results with the next lot of 817. The fruit growers round here who have seen them think they are doing very well."
Order now—Apples, Pears, Plums, Peaches, etc. Reliable Trees packed by experts sent to all parts of the Commonwealth.
Catalogue and price list free.
C. J. GOODMAN
Picnic Point Nurseries, P.O., Box 47 - BAIRNSDALE, VIC.
(W-McF.)

Illegal Trading in Dried Fruits.

Heavy Fines at Mildura.

PROSECUTIONS under the Dried Fruits Acts were successfully launched in Mildura on June 16. Substantial penalties were inflicted on offenders by Mr. E. E O'Grady, P.M.

William Freeman, of Coomealla, N.S.W., was fined £70, with costs, for having dealt in dried fruits whilst not registered as a dealer.

Mr. R. Hillard, instructed by the Crown Law Department, who appeared on behalf of the Victorian Dried Fruits Board, explained to the Police Magistrate that the Mildura district produced 60 per cent. of the Commonwealth's dried fruit, and of that 80 per cent. had to be exported. Many devious means had been used to evade the regulations and dispose of fruit outside the regular channels. Continuing, Mr. Hillard said that one of the witnesses, Frank Gallagher, was a member of the Red Cliffs branch of the A.D.F.A., and being suspicious that illicit traffic was going on, he decided to answer the advertisement which led to the prosecution. He was acting in co-operation with the Dried Fruits Board.

Frank Gallagher, horticulturist, of Red Cliffs, told how he had answered Freeman's advertisement and had negotiated for the sale of the fruit. Other witnesses gave corroborative evidence, including that of the seizure of the fruit which was being conveyed by a circuitous route.

RIDLEY & HOULDING
Covent Garden Market
LONDON

Specialists in Australian Fruit.

Solicit consignments of Apples, Pears, Etc.

Our record of over 30 years' standing in the handling of Australian fruit, with satisfactory results, is a recommendation for growers to ship their fruit to our house.

Representatives—
International Fruit & Mercantile Company Ltd., Melb., Vic., Australia; and A. J. Walshe & Co., Hobart, Tasmania.

TASMANIA
Leading Australian Firm of Fresh Fruit Exporters.
Manufacturers IXL Jam and Canned Fruits.
Hop Factors—Largest Cool Stores for Hop Storage in Commonwealth.
All Orchard Supplies available at all times.

Agents for—
Associated Evaporated Apple Manufacturers, London Assurance Corporation, Federal Steam Navigation Co. Ltd., Scottish Shire Line of Steamers, Osaka Shosen Kaisha.

Correspondence Invited.

H. JONES & CO. LTD.,
HOBART

J. G. MUMFORD
(Established 1906)
Fruit & Vegetable Salesman
Account Sales Posted Daily

APPLE EXPORTER
"Fruit Exchange,"
449-451 FLINDERS LANE
and
No. 35 Wholesale Fruit Market.
MELBOURNE

Reference—Satisfied Growers in all States

Charles Henry Plummer, dried fruits inspector, said that when Freeman read the notice of the seizure of fruit he remarked, "This is a case of fruit stealing I bought the fruit and the Government steals it form me"

For the defence, Freeman said he was a grower and packer He had an interstate trading license, which gave him authority to trade in Victoria In reply to Mr. Hillard, defendant said he had not furnished to the N.S.W. Dried Fruits Board security for the fulfilment of the conditions of the interstate license. He was not familiar with the regulations in Victoria.

After adjournment, Mr. O'Grady said he had considered the evidence carefully. Having regard to the object of the legislation, he found the offences were deliberate. Defendant would be fined £35 on each of the two charges, with £7/10/- costs.

Robert William Barclay was fined £70, with costs, for assisting in the transaction.

Robert William Hoy, horticulturist, of Red Cliffs, was fined £10, with £5 costs, for having sold dried fruit that had not been packed at a registered packing house. For the defence, Hoy said the fruit had been condemned last year: the Red Sun Co. had refused to take it: the Water Commission told him to do what he liked with it. He expected to get £5 per ton, and was surprised at the offer of £18: he was in need of the money, so he sold the fruit.

Arthur Richard Johnson was charged with having transported fruit contrary to the regulations. Mr. Hillard said the regulations provided for fruit being conveyed in a direct route to packing shed. This fruit was carried at night by a circuitous route. Defendant was fined £10, with £5 costs.

AUSTRALIAN DRIED FRUITS.

Oversea Sales.

The London Agency of the Commonwealth Dried Fruits Export Board is advised that 604 tons of Australian dried fruit were sold in Great Britain for the week ending June 18 for an aggregate value of £26,300.

Sales included 146 tons new season's Sultanas at an average price of £56 per ton, 260 tons of Currants at an average of £38/15/- per ton, and 191 tons old season's Sultanas at an average of £40/8/4 per ton.

Shipments to Great Britain for the 1931 season to June 18 total 21,364 tons, as compared with 24,661 tons at the corresponding period of last year. The bulk of this fruit is afloat, but 2,845 tons have already been sold in Great Britain for an aggregate value of £135,500.

The total quantity from the harvest of the present season shipped to oversea destinations inclusive of shipments to Great Britain amounts to 25,083 tons, including 2,543 tons to Canada, which will be substantially increased by the record consignments being shipped to the Canadian market per the s.s. "Canadian Cruiser."

It is anticipated that shipments to Canada will create a new record, but that in consequence of the diminished harvest, which is less than last year by 20,000 tons, consignments to Great Britain are now unlikely to exceed 31,000 tons, the bulk of which fruit has already been despatched.

The offtake in Great Britain continues steady, but there is every probability of substantial clearances during the months of July to September, by which time the bulk of the Australian crop for this season will have reached the British market.

"Vallo" Sprays—*A Sound Investment*

Efficient Sprays which have stood the Test of Time

Invest Wisely **"Vallo" Sprays Give Excellent Results**

"Vallo" Lime Sulphur
Universally Recognised. The Most Reliable, Effective and Economical Lime Sulphur Wash on the Australian Market.

Bordeaux (Home-Made)
6.4.40 4.4.40
Why go to the Trouble of Slaking Lime, Dissolving Bluestone and Spreader. "Vallo" Bordeaux does away with this Tedious Process.

"Vallo" Prepared Red Spraying Oil
An Excellent Dormant Period Spray.
A Most Thorough Insecticide.

"Vallo" Bluestone
We are pleased to announce that we are Manufacturing a Copper Sulphate, which we guarantee equal to best imported. Supplied at competitive prices.

Full Particulars regarding all "Vallo" Products gladly supplied on application

VICTOR LEGGO & FARMERS LTD., Melbourne

VALLO
SPRAYS
THAT
PAY

Letters to the Editor.

APPLES ON PEAR STOCKS.

The Editor, "Fruit World of Australasia."

Dear Sir,—A friend of mine wishes to convert a number of Pear trees to Apples. Can you, or any of your readers, give any information as to what varieties of Apples will make a good union and succeed on various varieties of Pears. Also, is it economically possible to work Quinces on Pear stocks; if so, what varieties? An answer to the editor of the "Fruit World of Australasia" will oblige

Yours faithfully,
"AMATEUR POMOLOGIST."

Auckland, N.Z., 2/6/31.

FRUIT FOR HAMBURG.

The difficulties confronting the Australian Apple export trade in regard to shipments for Hamburg are set out in the following letter from Ph. Astheimer & Sohn, fruit brokers, Hamburg, under date May 15, 1931. The firm writes to the "Fruit World" thus:—

"Referring to your issue of April 1, Vol. XXXII., No. 4, we have read with very much interest your remarks on page 220 about freight for Hamburg from South Australia. We agree that it is a pity there is not a single cargo direct for Hamburg. On the other hand, we know that the South Australian crop is only very short this season; nevertheless, it is in our opinion certainly not favorable for the trade of South Australian Apples, if our market has been bare of them for two years. We should mention that we have tried to place various orders for South Australian Apples, and every one of the deals has fallen through, on account of lack of space, after it was agreed upon in regard to any other point. It is a fact, the steamers which did call at Adelaide refused to take fruit for Hamburg, although they went to this port and loaded Apples for this market from other shipping places. As Apples, however, suffer by transhipping on account of bruising and breakage, our firm has refrained from importing any South Australian Apples this season.

"We noticed that a very strong protest has been made to the Australian Overseas Transport Association and the Export Overseas Transport Committee. As far as the Hamburg receivers are concerned, there are many other points to which we do not agree with actions of abovementioned Association and Committee. More than one recommendation and proposition has been made by us to the steamship companies and business friends connected with the Australian fruit business, but with no, or very little, success. The steamship companies co-operate very little with the fruit trade, or at least with the Hamburg receivers. This is not only referring to the South Australian business, but the Australian and Tasmanian business in general."

Four Legs and a Tale.

A fruitgrower bought a horse to haul his fruit to market. It was not exactly a thoroughbred, but it had four legs.

One day he took his bargain to the blacksmith to have him shod. The smith regarded the weary-looking animal critically, paying particular attention to his lean body and spindly legs.

"You ought to have a horse there some day," he said at length. "I see you've got the scaffolding up."

New Zealand Fruit Exports.

1,351,000 Cases Sent Overseas.

THE OVERSEAS EXPORTS of fruit from New Zealand this season have set a new record of achievement, for the total exceeds the record season of 1930 by about 20,000 cases.

Taking the Otago export at 81,000 cases and adding to this the 1,267,000 cases handled under the Control Board scheme, the gross export amounts to 1,351,000 cases. These figures are reported in "The Orchardist of N.Z." For the first time Auckland has been able to secure direct loading for the whole of its export crop. In past years, at the beginning of the season it has been necessary to rail some of the early fruits to Wellington, but this season that practice has been avoided. Auckland exporters have also been able to make direct shipments to lift their final consignments.

Details of the quantity prepared for export by the following provinces are as follow:—

	1931.	1930.
Auckland	116,000	104,000
Poverty Bay	17,000	22,000
Hawke's Bay	214,000	246,000
Wairarapa	17,000	20,000
Marlborough	59,000	56,000
Nelson	815,000	779,000
Christchurch	29,000	1,000
Totals	1,267,000	1,228,000

Discharge ports of fruit sent from New Zealand are:—

London	407,000
Southampton	262,000
West Coast ports	155,000
Hook of Holland	380,000
South America	46,000
Canada	17,000
Total	1,267,000

Wellington loaded the largest quantity of fruit in any one season in its history, no fewer than 1,070,000 cases passing over the local wharves into the holds of overseas liners. This year is the first occasion on which Wellington has ever exceeded the million mark. As with other lines of primary produce, the United Kingdom is still New Zealand's most important market, and at least two-thirds of this year's total crop has gone, or is on the way, there.

The Distribution.

Canada was supplied with 17,000 cases during the season, 1,000 going to Vancouver and 16,000 to Halifax. By working from both coasts the board is endeavoring to build up a solid Canadian trade. Exports to South America have dropped heavily, and this year only 46,000 cases were sent there as against 157,000 last year. The reasons for this are chiefly the adverse exchange and the fact that the Argentine has placed a duty on New Zealand fruit. Further, the Board did not feel justified in shipping larger quantities because even the local grown fruit in South America was not by any means realising high prices.

In addition to 380,000 cases shipped direct to Hook of Holland, over 52,000 cases have been sent there this season by way of transhipments from London. Shipments to West Coast of England ports during the 1931 season were distributed as follow:—Liverpool, 34,000 cases; Avonmouth, 15,000; Glasgow, 65,000, Manchester, 41,000; making a total of 155,000 cases.

Pear Shipments.

The quantity of Pears exported this year is about the same as last year, when there were 55,000 cases. Fortunately it has been possible this year to get most of the Pears into Pear chambers. Difficulty has often been experienced in this respect, and it has been necessary to forward them in small parcels in Apple chambers. It is felt that if Peaches could be transported satisfactorily a fair trade could be built up with them. Last year one New Zealand grower sent abroad a small consignment of Walnuts, the results proving satisfactory. The same grower sent a further twenty-seven cases this year.

Season's Exports.

The following are the figures of recent season's total exports of Apples and Pears:—

	Cases.	Apples.	Pears.
1928	1,019,137	963,821	55,316
1929	989,709	930,813	58,896
1930	1,331,854	1,272,652	59,202
1931	1,348,365	1,291,680	56,685

Up the Pole.

A woman motorist was driving along a country road when she noticed a couple of repair men climbing telephone poles.

"Fools!" she exclaimed to her companion; "they must think I never drove a car before."

Blonde: "I certainly gave my boy friend a piece of my mind."

Brunette: "It must have been a small helping."

ELECTRIC FRUIT MARKING COMPANY
The Patentee of Australian Letters Patent No. 3916/21,
Relating to
"PROCESS OF MARKING FRUIT,"
is prepared to satisfy any demands and all requirements of the public respecting said Invention to Part V. of the Patents Act.
EDWARD WATERS & SONS,
Patent Attorneys,
414-418 Collins Street, Melbourne, and 11-13 Castlereagh-street, Sydney.

Rockhampton
The starting point for the Great Queensland Central Railway has a population of 30,000, and offers a good market for your fruit.
ORCHARD FRUIT SUPPLIES
offer a prompt and reliable selling service. Best Prices. Prompt advices and returns.
Reference:—Australian Bank of Commerce.
'Phone: 1584.
P.O. Box, 223. Brand: ORCHARD RTON.

Western Australia.

Sale of Bridgetown Apples.

A large number of Bridgetown (W.A.) growers recently met members of the Apple Sales Board. Mr. G. Sharpe (Chairman of Directors of the local branch of Westralian Farmers Ltd.) presided, and amongst the visitors were Messrs. W. Berryman (Berryman & Langley Ltd.), M. Scanlon (Scanlon & Simper Ltd.), T. Lantzke (representing F. W. Lantzke), R. H. Harper (Manager of Producers' Markets Co-operative Ltd. and Chairman of the Advisory Committee), and H. W. Soothill (Secretary of the Apple Sales Board).

Various speakers outlined the activities of the Apple Sales Board, which is a non-trading concern; it acts purely as an advisory committee, the selling operations being left in the hands of the firms operating in this line.

A motion that growers in the Bridgetown district support the scheme in its entirety was carried unanimously.

WINE MARKETING BOARD.

Mr. D. T. Durieu and Mr. E. Miller were elected to the Wine Overseas Marketing Board by the co-operative interests, and H. K. Johns by the proprietary and privately owned concerns for Western Australia.

Representatives of proprietary and privately owned wineries and distilleries in other States are:—Victoria, M. C. MacCallum; New South Wales and Queensland, H. P. L. Buring; South Australia, H. Kay and L. N. Salter. They will hold office for two years from June 17.

£12,000 TO ASSIST PLANT RESEARCH.

Empire Marketing Board's Grant.

The Empire Marketing Board recently decided to make a generous grant of £6,000 per annum for two years for the assistance of certain portions of the Division of Plant Industry.

The activities that will be so helped are those concerning fruit, cereals and pastures

Mr. W. M. Carne, of the Division of Plant Industry (Council for Scientific and Industrial Research), is now on a visit to Great Britain, where he will make himself conversant with the investigations of the British Food Investigation Board and will also visit the Horticultural Research Station at Long Ashton and other research organisations.

It is being endeavored to arrange for Mr. Carne to return to Australia, via South Africa, in order that he may become familiar with the organisations and practices of the fruit export industry of that country.

Early to bed,
Early to rise;
You'll soon go broke
If you don't advertise.

Poor Old Dad.

"What caused your husband to leave home?"

"I haven't the least idea. He just packed up and left the morning after my mother and two sisters came to spend the winter with us."

It MAY Mean
The SURVIVAL of the FITTEST ! !

They will be those who go in for
BALANCED MANURING

NITROPHOSKA

Has now had time to prove to many wise growers that it gives
BOTH QUANTITY AND QUALITY
for all classes of fruit

ANALYSIS :
NITROGEN . 16% PHOSPHORIC . 16.5% POTASH . 21.5%

Limited Supplies Only Available. ORDER EARLY from your packing shed or from
HENRY H. YORK & CO. PTY. LTD.
573-585 Lonsdale St., Melbourne

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

NEW SOUTH WALES.

Sydney:
Chilton, F., City Fruit Markets.

VICTORIA.

Melbourne:
Cave, F., & Co., Melbourne.
Davis, J., Pty. Ltd., Wholesale Fruit Market.
Millis, A., & Sons, Wholesale Fruit Market.
Lister, G., Wholesale Fruit Market.
McLean, N. N., Pty. Ltd.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Wholesale Fruit Market.
Renouf, R., Wholesale Fruit Market.
Ross, J. W., Wholesale Fruit Market.
Silbert, Sharp & Davies, Wholesale Fruit Market.
Stott & Son, T., Wholesale Fruit Market.
Tim Young & Co. Pty. Ltd., Wholesale Fruit Market.
Vear, F. W., 49 William Street.
Wilson, H., Wholesale Fruit Market.
Woolf, G., Wholesale Fruit Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Wholesale Fruit Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., Temple Place, Macquarie Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

GREAT BRITAIN.

London:
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
The Port of Hull, London and N.E. Railway. Rep., Burns, Philp & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
Johnson, T. S., & Co.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Astheimer, P. H., & Son, Fruchthof.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof. Reps., J. B. Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.

GERMANY.

Hamburg.—Messrs. Timm & Gerstenkorn, fruit brokers, Hamburg, have furnished catalogues of their sales, on April 22, of boxes and trays of Tasmanian Pears, ex s.s. "Stassfurt." The offerings were spread over two sales, because freezing was feared. On examination, however, it was found that the Williams had suffered from freezing, particularly in single trays, count 36.

Best demand prevailed for Bosc, D'Anjou, and good quality Williams. Prices varied according to condition. Bosc realised 6 to 7.25 marks per tray. Anjou 12.75 to 76 marks per case; Clairgeau 11.50 marks, Williams 9 to 13 marks per case.

Catalogue to hand from Ph. Astheimer & Sohn, fruit brokers, Hamburg, giving details of sales of 3.061 cases Australian Apples and 1,132 packages of Pears, ex "Stassfurt." Apples, Vic. Dunns 14.25 to 15 marks, Cleo. 10 to 12.50, Jon. 11.50 to 12.50, Tas. Cleo 11 to 12.75, Duke of Clarence 9.50, Cox 11.25 to 14, R.P. 8.50 to 10 marks.

London (June 12).—The following prices have been realised for fruit from the steamers "Port Gisborne," "Otranto," "Ballarat" and "Demosthenes":—Apples, Tas. Sturmers 8/- to 12/3 a case, Scarlets 8/- to 12/-, Jons. 7/- to 12/6, French Crabs and Cleo. 9/- to 12/-. Vic.: Yates and Rokewoods 9/- to 12/-, Jons. 8/- to 12/6, Statesmen 8/- to 11/-, G.S. 10/- to 13/9, Dunn's 9/9 to 11/6. Pears, Vic.: Winter Nelis 12/- to 17/6 a box, Packhams 12/- to 16/-, Boscs 10/6 to 14/9, Keiffers 8/- to 13/-; Tas. Winter Cole 12/- to 14/-, Winter Nelis 13/- to 13/3, Jos. 13/6 a box; and others in packages sold at proportionate prices.

NEW ZEALAND FRUIT IN GREAT BRITAIN.

Cables from New Zealand High Commissioner.

May 4, 1931.—"Fordsdale." Condition generally good, but "Fordsdale" Cox's Orange forward and show pit.

Apples—C.O.P., 13/- to 17/-; Jon. and Del., 12/- to 13/-; small Dunn's F. and London P., 10/- to 11/-; Lord Wolseley, 11/- to 12/6. Pears—Comice (bushels), 9/- to 15/-; Comice (bundles), 13/6 to 18/-; B. Bosc, 13/- to 16/-; W. Cole, 11/- to 15/-; others, 10/- to 14/-.

May 11, 1931.—"Tairoa" and "Rangitata."

Apples—C.O.P., 14/- to 18/-; Jon. and Del., 11/- to 13/-; Dunn's F., 10/- to 11/-; Londons, 10/- to 12/-. Pears—W. Cole, 9/- to 15/-; W. Nelis, 14/- to 18/-; B. Bosc, 13/6 to 18/-; Comice, 15/- to 18/-.

May 18, 1931.—"Tekoa." Jon. at 11/- to 13/-; Del., 11/- to 12/6; Scarlets, 12/- to 13/-; Londons, 10/- to 12/-.

May 25, 1931.—"Tainui" and "Maimoa." Jon. and Rome, 10/6 to 12/6; Del., Londons and Dunn's, 10/- to 12/-; Sturmer, 12/- to 13/-. Pears—Market is dull on account of heavy arrivals from Australia.

NEW REGISTRATIONS.

Sterling Orchard, Dural, N.S.W., orcharding—Com. 15/5/31. Ptr.: George M. Smith. Regd. 5/5/31.

Langley Vale Oranges Ltd.; nominal capital, £12,000 in £1 shares. To carry on the business of orchardists. Subscribers: W. Langley, M. Connell, A. A. Maloney, H. J. Lyne, H. F. O'Neill, W. P. Chapman, F. O. Stokes, W. E. Langley, and H. Langley. Head office: Sydney.

APPLE PRICES REDUCED.

LONDON, June 25.

Sales of Tasmanian Apples from the steamer "Bitterfield" were made at Hamburg at the following prices:—Cleo., 8/- to 11/9 a case; Dunn's and Sturmers, 7/- to 9/-; Demo., 9/- to 9/6; and Scarlets, 7/- to 8/6 a case.

LONDON, June 26.

At the London sales of Australian fruit the following prices were realised:—The steamers "Karamea's" and "Berwickshire's" shipment of Tasmanian Apples:—Sturmers, 9/- to 10/6; Scarlets, 9/- to 10/9; French Crabs, 8/6 to 11/-; Jon., 8/- to 10/6; Cleo., 9/- to 10/- a case; the steamer "City of Dieppe's" Victorian Pears:—Winter Nelis, 13/- to 16/-; Beurre Boscs, 13/- to 15/-; Packhams, 12/- to 13/3; and Winter Coles, 12/- to 13/6 a box.

HAMBURG.

Mr. Aug. Stier, fruit broker, Hamburg, reported on May 7, that in addition to the 65,000 boxes of American Apples, there were over 42,000 cases of W.A., Tas., and Vic. Apples, and 7,000 packages of Vic. and Tas. Pears ex. "City of Glasgow" and "Port Caroline." Apples were generally satisfactory, especially Jon. Nearly all the C.O.P. were overripe; W.A. Cleos. and Dunns, also some Tas. Apples, were partly affected by bitter pit. Prices: W.A. Cleo., Jon., Dunn's, M. 11 to 15; Vic. Cleo., Jon., Dunn's, Londons, M. 11 to 14; Tas. C.O.P., mostly M. 11 to 12; Cleo., Jon. Dunn's, Alf., Worcesters, M. 11 to 13.

Glasgow.—Russell, Turnbull & Co. Ltd., fruit brokers, Glasgow, report 23/4/31:—Apples, ex "Idomeneus": W.A. 13,000, and Vic. 13,000; mainly Jon., short colored and dull, demand slow; Vict. fruit showed hail damage. Portion of cargo withdrawn and sold later at slightly firmer prices. W.A. Jons., 8/-, 9/6; Cleo., 10/-, 11/-; Dunns, 9/3, 9/9; Vict. Jon., 7/3, 9/-; Dunn's, 8/3, 9/6; L.P., 7/6 to 9/-; K. David, 7/6, 8/-; American Winesaps in large supply, 9/6 to 11/6.

Liverpool.—Macgeorge & Jardine Ltd., Fruit Exchange, Liverpool, report, May 20:—Fruit ex "Nestor" far from satisfactory, much full-ripe and warty, particularly Vict. Jons. Prices: Vict., Jon. 8/- to 12/6, Alf. 13/-, L.P. 10/-, Del. 10/9; Tas., Cleo. 10/6 to 13/3, Jon. 11/3 to 12/9, C.O.P. 12/3 to 14/-, Alf. 11/- to 13/-; S.A., Cleo. 11/3 to 12/3, Jon. 11/6 to 11/9; W.A. Del. 11/9 to 12/9, Jon. 12/-, 13/-; N.S.W., Jon. 9/9 to 13/-, Dunns 12/- to 13/3.

London (5/5/31).—Messrs. Connolly, Shaw Ltd., incorporating M. Isaacs & Sons, London, report on May 5:—W.A., Jons. 8/6 to 12/3, Dunns 10/3 to 13/9; S.A., Cleo. 11/- to 12/-, Dunns 11/- to 13/-; Vic. quality generally disappointing, large percentage of "plain" grade; hail marks on "standards," some Cleos. showing bitter pit. Prices: Jons. 7/6 to 12/-, Cleo. 9/9 to 12/3, Romes 11/3 to 11/9; Tas. Cox's variable, some excellent, some with pit, Jons. short of color. It was pleasing to note the increasing use of the Canadian whitewood container. Prices: Cox 10/- to 15/6, Five Crown 8/- to 13/-, Cleo. 9/3 to 11/9, Scarlets and Jon. 8/9 to 10/-.

NEW ZEALAND.

Dunedin (20/6/31).—Messrs. Reilly's Central Produce Mart, reports prices as follow:—Grapes, Gros Colmars, 2/3 lb.; Australian, 15/- case; Tomatoes, Timaru, 10d., 1/3; Apples, Jon., choice 5/6, 7/-, small 3/6, 5/-, others 4/-, 6/-; Sturmers, choice 7/-, 8/6, small 3/6, 5/-, cookers 5/6, 6/6; Del. 6/-, 10/-, small 4/-, 5/-; Pears, W. Coles 5/-, 6/-, over-ripe and small 1/-, 1/6, Nelis 6/-, 8/-; Californian Oranges, 37/6; Australian Navels, 11/- to 18/-, according to sizes; Tahiti Oranges, 14/-; Poormans, 12/-, 14/-; Mission Lemons, 50/-; Australian Lemons, 20/-; Grapefruit, 36/-; Passions, N.Z. wanted; Australian, 15/-; Mandarins, 12/6; Pines, 15/- to 22/-; Bananas, ripe, 25/-; Coconuts, 14/- sack.

NEW SOUTH WALES.

Sydney (19/6/31).—Apples, local, eating, Del., 7/- to 10/-; Romes, 5/- to 8/-; Jons., 4/- to 8/-; Five Crowns, 4/- to 6/-; G. Smiths, 6/- to 10/-; cooking, 5/- to 7/-; jam, 2/-; Tas. Del. and Jons., 5/- to 8/-; Scarlets, 3/- to 7/6; G.F., 4/- to 6/-; F.C., 5/- to 8/-; few 9/-; Demos. and Croftons, 5/- to 8/-; other varieties, 3/- to 6/- per bushel case. Bananas (genuine grades: nines and eights, 14/- to 17/-; sevens, 12/- to 15/-; sixes, 8/- to 11/- per case. Citrus fruits: Lemons, local, choice, 4/- to 5/-; med., 3/-; small or inferior, 2/-; irrigation, 5/- to 6/6; Oranges, 2/- to 4/6; Navels, 4/- to 6/-; irrigation, 4/- to 6/-; Mandarins: Emperors, 2/- to 5/-; Thornies, 3/- to 9/- bus. Grapefruit, 4/- to 7/- bus.; Guavas, 3/- to 4/- ½ bus. Passionfruit, local, 2/6 to 7/- ½ bus. Papaws, 5/- to 9/- per case. Pears, local, Packhams, 6/- to 9/-; few, 10/-; W.C., 4/- to 9/-; cooking, 3/- to 5/-; Tas. W. Coles, 3/- to 9/-; Nelis, 4/- to 6/-; Jos., 7/- to 10/-; others, 2/- to 6/- bus. Pineapples: Queens, 6/- to 10/- per case; Tomatoes: irrigation, 4/- to 8/-; Bowen, 6/- to 12/-; repacked to 15/- per ½ bus. case.

F. CHILTON
ESTABLISHED 1894
FRUIT COMMISSION AGENT
Licensed under Farm Produce Agents Act
Highest Market Prices — Prompt Returns — Reliable Advice
Registered Address for Telegrams and Cables, "CHILTONS"
References :— Bank of N.S.W., Haymarket, Sydney and Growers throughout Australia
CITY FRUIT MARKETS, SYDNEY

NEW DISEASE-PROOF BANANAS.

NEW KINDS OF BANANAS, with names like Bamulan, Lacatan and Giant Fig, may replace the older sorts in our shops and markets, if experiments described in the Empire Marketing Board's latest report* are successful, writes the "Fruit, Flower and Vegetable Trades Journal," London.

There are at least 200 varieties of Apples on the British market, but only two kinds of Banana are sold in any quantity. Yet many tender-flavored varieties grow in most Banana-producing countries.

Their thin, delicate skins, however, make them bad travellers, and the bulk of our Bananas consist of the variety called Gros Michel, which grows in the West Indies and in South America. It is a hardy traveller, and, as most of our readers know, comes over uncrated in loose bunches in "Banana boats," which bring us about £2,000,000 worth of the fruit a year from the British West Indies. A Banana sickness called "Panama Disease" has, however, spread to the West Indies from South America, where it has forced the abandonment of thousands of acres of plantations. It does not attack the fruit itself, but kills off the Banana plants, and scientists have been called in to find a remedy. One solution is to substitute for the Gros Michel other varieties which are immune from the disease.

The Empire Marketing Board has built an experimental cold store at the Imperial College of Tropical Agriculture, Trinidad, where scientists are studying the behaviour of these new Bananas on imitation voyages and in storage, and devising methods of transporting them undamaged to Great Britain.

The report, which contains the first results of these experiments, states that two varieties—Cavendish and Lacatan—are particularly hopeful. Dr. Wardlaw and Dr. McGuire, the joint authors, say that bulk trials have been made, and "if these are confirmed, the West Indian Cavendish seems a suitable substitute for the Gros Michel."

The Cavendish is described as having a flavor "better than the Gros Michel." It is more delicate, pale in color and with "a tendency to freckling with advancing maturity." This Banana is often known as "ladies' fingers." The Lacatan is even sweeter and more delicate in flavor, but its very thin skin makes it especially liable to bruise.

Claret-colored Bananas behaved well in storage, but their inside was not as attractive as their barbaric outside. A hybrid, bred by the Trinidad scientists, called "GM X B2" (a cross between Gros Michel and wild ancestors collected from tropical Asia, the original home of the Banana, by a special scientific expedition), gave very satisfactory results. Its export possibilities, however, are spoilt by its unfortunate tendency to produce, occasionally, a large black seed—a reversion to an ancestral habit which has disappeared with cultivation.

A patent has been taken out by the Low Temperature Research Station at Cambridge, which co-operated in the experiments, for the treatment of Banana stems, in order to prevent attacks by fungi which cause serious rots during the voyage. The patented process consists of slicing off the end of the stem with a sharp sterilised knife and smearing vaseline over the wound. This checks the onslaught of "main stalk rot," a disease which does much damage by causing the Bananas to drop off the stem.

*"The Behaviour and Diseases of the Banana in Storage and Transport." H.M. Stationery Office, 1/- net.

SUGAR AGREEMENT.

£315,000 to Assist Fruit Industry.

THE SUGAR AGREEMENT has been duly signed. The delay in signing—already referred to—was on account of some points of difference between the Federal Government and the Queensland Government.

In particular, the clause relating to preference to unionists has been discarded. The only reference to this subject is the provision that wages shall be settled by arbitration or agreement—as under existing conditions.

As regards the effect on the fruit industry—there will now be a definite sum of £315,000 which is to be made available from the sugar industry to the fruit industry for three years.

This sum will be administered by a special committee set up for the purpose.

This sum is to be apportioned as follows:—

(1) To continue the present rebate of £6/5/1 per ton on sugar used in processing fruit for consumption in Australia.

There is this difference, however, that whereas previously the sum was a straight out rebate to manufacturers, the present agreement provides that it is subject to manufacturers paying such prices to growers for fresh fruit "as the committee declares to be reasonable."

This will absorb about £180,000.

(2) To continue to pay the rebate on the sugar contents of processed fruits exported, bringing such sugar into line with "world's parity"—absorbing £15,000 to £20,000.

(3) The balance of about £110,000 is to be used in assisting the fruit industry—by subsidising canned fruit and jam exports, assistance to dispose of more jams and canned fruits in Australia.

* * * * *

The committee to administer the sugar concession of £315,000, is to consist of the representative of each of the following:—The Federal Government, the Queensland Sugar Board, growers of jam fruits, growers of canning fruits, proprietary manufacturers of fruit products, cooperative and State manufacturers of fruit products.

FRUIT TREES

ONE GROWER SAYS—
"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

Never Without EGGS During Winter Months

The interesting letter given below is only one of many that we are constantly receiving. It's an old, old story.

Chapter 1. The hens are laying badly.

Chapter 2. Poultry-keeper hears of the wonderful results obtained with Karswood Poultry Spice (which contains dried and ground insects).

Chapter 3. Uses Karswood Poultry Spice with the usual results—hens increase their output to an amazing degree.

Chapter 4. Just to make quite sure that Karswood is responsible for the improvement, it is not fed to the fowls for a short period—egg production immediately declines.

Chapter 5. Poultry-keeper resolves never to be without Karswood Poultry Spice again.

"Satisfied it was no fluke."

"Since writing you I have left off using Karswood, and the falling off in egg production has been remarkable. I did it to test Karswood to my own satisfaction, and I am quite satisfied that the way my hens laid during the winter was no fluke, but simply due to the use of Karswood. A friend of mine duly told me last night that she had scarcely had an egg all winter out of twenty fowls. I have never all through the winter months been without eggs. I, of course, recommended her to Karswood, and shall do so to all my friends. I think I have proved its worth this winter, when seven hens, and none of them under twelve months old, have laid six, five and four a day through the winter. I will start to use it again. Fancy a falling off in August, when they should be laying well. I gathered three yesterday and two to-day. I am more than pleased with Karswood Poultry Spice, and shall order some more to-day. A two-shilling packet lasted me well over two months."

(Sgd.) MAY ASKEY,
9 Dalhousie St., Haberfield.

NOTE THE ECONOMY.

1/- packet supplies 20 hens for 16 days.
2/- packet supplies 20 hens for 32 days.
13/- (7 lb.) tin supplies 140 hens for 32 days.

SUPPLIES:

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½lb. packet, 1/-; 1lb. packet, 2/-; 7lb. tin, 13/-; 14lb. tin, 25/-; 28lb. tin, 48/-.

KARSWOOD
POULTRY SPICE
INCREASES EGG-PRODUCTION WITHOUT FORCING

Poultry Notes

THE months of July, August and September are those in which hatching operations should be in full swing.

* * * * *

To get healthy chicks from fresh, fertile eggs, three things are absolutely necessary—heat, air and moisture.

* * * * *

The difficulty of procuring broody hens at this season of the year often results in hatching being carried on well into the summer.

* * * * *

An incubator is the only sure way of getting out a good supply of early chicks.

* * * * *

Do not buy a bigger machine than you need to fill requirements.

* * * * *

Set the machine in a place free from draughts and away from any wall that has the sun shining on it.

* * *

Avoid vibration. An asphalt or cement floor is best. but do not have a damp earthen floor.

* * * * *

Always read and carefully follow the directions supplied with a machine.

* * * *

It is not hard, as some people imagine, to run an incubator. Common sense is the chief requirement.

* * * * *

Avoid extremes of temperature. An incubator should always be kept in a place where the temperature remains as nearly even as possible.

* * * * *

An incubator in which the heat is evenly diffused should be run at 102 deg. This will increase to at least 103 deg. towards the end of the run, as a result of the increased heat coming from the eggs themselves.

* * * * *

Keep the incubator at an even temperature of 102 deg. for at least a day before inserting the eggs.

* * * * *

Insert only smooth-shelled and even-sized eggs of at least 2 ozs. in weight, and see that they are fresh.

* * * * *

The supply of moisture necessary depends on the design of the incubator and upon the climatic conditions. A little during the last five days should be sufficient at this season of the year.

* * * * *

Eggs should be turned regularly—twice daily, except at the beginning and end of the hatch. At the beginning it is better to leave them undisturbed for twenty-four hours to heat up.

* * * * *

The eggs in the incubator trays should rest with the large end slightly higher than the other. This tends to prevent the chick's head being at the small end.

Do not turn the eggs during the last three days of incubation.

* * * * *

Duck eggs require slightly different treatment.

* * * * *

The machine may be run at a lower temperature, but the difference will depend upon the machine.

* * * * *

One degree lower is usually sufficient.

* * * * *

Where free ventilation and free moisture are used, a little more moisture during the last few days is generally better for duck eggs.

* * * * *

More airing and cooling is also advisable, but take care to close the draws whilst the trays are out, in order that they may heat up again as quickly as possible.

* * * * *

Best results are obtained where the incubator is run in a room where a uniform temperature of about 65 deg. can be maintained.

* * * * *

After the machine has been slowly and thoroughly heated, and held steady at 100 deg. for twenty-four hours, the duck eggs should be inserted. Then turn on a little more flame, and get the heat up to 102 deg. with the bulb of the thermometer level with the top of the eggs.

* * * * *

The first test should be made on the sixth day and the second on the sixteenth.

* * * * *

The regular turning of the eggs twice daily should begin after the first forty-eight hours.

* * * * *

During the third week the animal heat in the live eggs will cause the temperature to rise, and less flame will be required. Do not let the thermometer go below 103 deg., however.

* * * * *

The cooling, apart from that associated with the daily turning of the eggs, should be performed regularly during the third week. They should be cooled till the thermometer resting on the eggs in the draw stands as low as 90 deg.

* * * * *

Under no circumstances should cooling be done during the last week.

This business-like White Leghorn Hen from the stud of Mr. J. Wear, of Werribee, has a record of 329 eggs to her credit.

Preparing the Poultry Ration.

Importance of Accurate Measure.

A fruitful cause of trouble on many poultry farms, observes a Departmental publication, is the lack of knowledge and want of appreciation of the importance of correct weights and measures in making up the daily ration. If only such articles as pollard and bran were concerned no harm would result, but in the use of meat or othes concentrates, salt and such ingredients, lax methods or misinterpreted measures are highly dangerous and calculated to cause loss of valuable birds and much revenue.

The kerosene tin is the measure most frequently used, as well as the common conveyor of poultry food on the farm. A tinful will weigh net, without the tin, approximately as under:—

	lb.
Pollard	18
Bran	12
Lucerne meal	12
Wheat (whole)	30
Maize (whole)	28
Maize (cracked)	25

The following table shows the approximate weight per quart (quart measure filled but not pressed down) of the main ingredients in use on a poultry farm:—

	lb.	oz.
Wheatmeal	1	8
Pollard	1	0
Bran	0	8
Lucerne meal	0	8
Oatmeal	1	0
Barley meal	1	8
Maize meal	1	8
Linseed meal	1	0
Wheat (whole)	2	0
Maize (whole)	1	12
Peas (whole)	1	12
Meat meal	1	8
Bone meal	1	12
Common salt (fine)	2	0
Flowers of sulphur	1	4
Epsom salts	1	12

It will be seen from the above table that measure for measure of the different articles is a most unreliable way of computing proportions, yet it is frequently found that these measurements are the sole means employed by the farmer to proportion the ingredients. It is not possible to make a balanced ration by measure unless the measure is first tested and co-ordinated with weight.

HAS NOT MISSED A COPY.

"I have been taking the "Australasian Poultry World" since No. 1 (August, 1929), and find it an A1 journal, and shall continue to take same, as I find it well worth the 6d. monthly.

In conclusion, allow me to wish you a long life, so that you can keep the journal up to the minute as it is at present."

Yours sincerely,

(Signed) "O.D.," Pascoe Vale.

THE PRIMARY PRODUCER—AUSTRALIA'S ANCHOR.

The Fruitgrower is a National Asset.

PRIMARY PRODUCERS are a splendid class of men. By their intimate contact with nature there has been developed a sense of sturdy self-reliance and genuineness that is too often lacking among those brought up among the artificialities of city life.

For the country woman no words of praise are necessary. She is a helpmeet, an inspiration: yet practical and resourceful.

In no section of primary production are there to be found better types than among fruitgrowers. The fruitgrower has to be a diligent worker, observant, scientific, a business man: and he must ever keep an open mind to note the improvements which are constantly being achieved. For this reason the best fruitgrower is a man of broad culture and wide reading.

The fruitgrower is one who is co-operating with Nature for the production of the world's best product. A helpful hint here on pruning, spraying, cultivation, manuring or marketing may mean the whole difference between success and failure, or shall we say greater success in place of moderate or small achievement.

It is at the grower's conferences that one sees them to advantage. Here are men engaged in a similar enterprise and to some extent competing with each other. Yet at growers' conferences there is always a spirit, not only of passive goodwill, but of practical helpfulness.

A grower who has discovered some valuable "wrinkles" in the art of manuring, pruning, or general orchard culture, gives the benefit of his experience with freedom and in detail. He is proud to have discovered something of value, and he is just as proud to give to his fellow producers the benefit of his discovery.

Here is no spirit of narrow parochialism. Instead, it is the outworking of a noble nature.

Too often has this spirit been passed over in silence. We repeat it. The fruitgrower is a man one should be proud to know. He is an asset to Australia. He is producing goods which keep the people of this land in health, and his goods go to other parts of the world and assist in the maintenance of our national credit.

It is this spirit of kindly service to his neighbors and fellow producers which is to be commended.

Some growers have quite a large correspondence giving helpful hints to those who write asking for information.

Australia is as yet at the dawn of her nationhood. Many problems are awaiting solution. But this may be said,—the primary producer will not fail. He will steadily pursue the even tenor of his way, enriching his own life and character in the fulfilment of his daily tasks and in his family relationships.

The fruitgrower comes close to the heart of nature. Springtime brings its wealth of blossom and wondrous beauty. Then summer comes with its early ripened fruits, and the autumn with the main harvesting. Then comes another kind of "blossom." The changing of the leaves of the deciduous trees under the mellowing influence of autumn. When winter comes, deciduous trees and vines seem as it were to stand at attention and say: "We've done our best for you and for all mankind. Now prune with skill and we are ready to continue our service."

Meanwhile, in winter and spring the Citrus grower is at work with his main crops.

The fruitgrower is deserving of the best consideration from his fellow citizens in country and city. He takes the good with the bad. When good seasons come he is open and generous. Under the stress of bad seasons he tightens his belt, but never loses his smile. "Hope springs eternal in the human breast." This may have been a bad season, but the next will be better.

All honor to the fruitgrower. He is a good fellow.

L. P. Rosen & Son, Fernhill Nurseries

Are now booking orders for all kinds of Fruit Trees, including Citrus, of which 100,000 are available, including some 15,000 Valencias and 5,000 Washingtons, grown from buds supplied by the Bud Selection Society.

Catalogues and Quotations Free on Application.

SPECIALTIES—FRUIT TREES, ROSE PLANTS, and KUNDE SECATEURS, Etc.

Pennant Hills Road, CARLINGFORD, N.S.Wales

-LEMONS-

We are the largest Buyers in Australasia

C. M. BROOKE & SONS
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"HENTY HOUSE," 499 LITTLE COLLINS ST.
MELBOURNE.

"Fruit World Annual"

Comprehensive review of Australian and New Zealand fruit industry.

"The Fruit World," Box 1944 G.P.O., Melbourne.

COMBATING THE CODLIN.

The Popularity of the Oil Spray.

A scientific treatise which goes straight to the heart of the matter of orchard pests indigenous to Australia is the most recent publication of the Shell Company, entitled "Profitable Fruit Spraying." The codlin moth and woolly aphis have been singled out for special treatment, and orchardists are enabled to follow from generous illustrations and simple descriptive matter the life history and habits of these.

To grow fruit successfully the orchardist cannot afford to wait until he sees manifest evidence of the presence of insects and fungi before he applies a remedy. Interesting sidelines are thrown on the two main varieties of orchard pests in Australia, which are classified into two wide groups, the chewing and the sucking, and the means of recognising them and their particular form of depredation are simply explained.

The correct methods of spraying and hints on the use and maintenance of the spray pump are included, and a chapter on orchard sanitation, contains much that is enlightening to all classes of orchardists.

The building up of the oil sprays, Shell Whitespray and Redspray, has been attractively outlined, and the last section of the book is devoted to seasonal spraying operations in the form of a comprehensive calendar which should make the book a handy reference work in all fruit-growing circles.

Copies of the book may be secured at all offices of the Shell Company.

IMPERIAL FRUIT SHOW.

Australia Gains Many Prizes.

Australia carried off the greater number of prizes at the spring section of the Imperial Fruit Show. Every State exporting and submitting entries appeared among the prize winners. Although the cable message made complaint that the Southern Hemisphere sent only a limited number of entries, yet Australia had 33, compared with 12 last year. In 1930 there were only two classes in the overseas section. This year separate classes were provided for some of the principal export varieties from Australia, New Zealand and South Africa. The Minister for Markets compliments growers on having taken special care to see that Australia was adequately represented at the show, and had won so many prizes.

Do not run any Financial Risk with your Fruit
but Consign it to

HEDLEY GEEVES LIMITED

Telegraphic Address:
"Apples, Brisbane."
(Hedley Geeves, Managing Director)
Registered Shipping No. 6.

FRUIT EXCHANGE——BRISBANE

SELECTED AGENTS FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

SUPPORT
CO-OPERATION

By Consigning your
FRUIT to the

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(Late Coastal Farmers' Co-operative Society Ltd.)

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Australasian POULTRY WORLD

ALL NEWSAGENTS

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AUSTRALIAN FRUIT EXPORT.

IN MAKING AVAILABLE the complete figures for the shipment of Apples this season from the Commonwealth, Mr. Parker Moloney, Minister for Markets, drew attention to the interesting comparison disclosed by an analysis of the figures shipped by the respective States, being an indication of the seasonal conditions which differed materially owing to the vast extent of the continent. Whereas there was a marked decline in the quantities available for export in Victoria, and particularly South Australia, this year, New South Wales and Tasmania were not so very much below the export figures of the previous year, but Western Australia this season more than trebled her exports over those of last year. Details are as follows:—

Apples.

States.	1930. Cases.	1931. Cases.
New South Wales	54,944	51,416
Victoria	877,469	361,234
Queensland	—	3,134
South Australia	647,320	28,230
Western Australia	159,214	473,260
Tasmania	2,635,886	2,309,238
Totals	4,374,833	3,226,512

An examination of the destinations of the fruits indicates that Denmark, South Africa, France, through the Port of Dunkirk, and Sweden were the only countries which this year took increased quantities over those of last season.

The main ports of destination are as follows:—

	1930. Cases.	1931. Cases.
United Kingdom	3,173,698	2,440,251
Canada	880	399
Ceylon	27,068	9,305
Malaya	30,050	16,231
South Africa	215	2,422
Belgium	4,960	61
Denmark	14,817	15,552
Egypt	9,673	8,320
France	230	5,406
Germany	907,263	595,534
Netherlands	105,243	42,491
Netherland East Indies	20,747	18,018
Sweden	53,930	68,687

The question that confronts every man in business today is not, "Shall I advertise?" That's been settled a long, long time ago.

The problem is—"How shall I advertise?"

Once in a while, not often, a man is born who isn't afraid. Then things begin to move.

"Fruit World Annual"

Comprehensive review of Australian and New Zealand fruit industry.

"The Fruit World,"
Box 1944, G.P.O.,
Melbourne.

FRUIT TREES
Citrus Deciduous Roses Ornamentals
QUALITY VERY PRIME FOR 1931
STARTLING REDUCTIONS IN PRICE
Catalogues Ready Correspondence Invited
F. FERGUSON & SON
AUSTRALIAN NURSERIES
HURSTVILLE, N.S.W.

GRUBBING WITH A "DIGGER" WINCH
Thousands in Use
It earns its Famous LOW PRICE in a Few Days
Write for Catalogue
A Man can uproot more Trees and Stumps in a Day than he would dig out in Ten Days
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Something of Interest for every Poultry Breeder.
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Announcement
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Has had Orchard Training and is Seeking Experience.
Experience cultivating and ploughing, also drying fruit.
First-class references.
R.N.T., "Fruit World," Box 1944, G.P.O., Melb.

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Insecticide and Fungicide
BRITISH PRODUCT
Information from—
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AUSTRALIAN FRUIT IN ENGLAND.

Valuable Publicity Campaign.

THE USUAL PUBLICITY CAMPAIGN conducted in the United Kingdom on behalf of the Australian Apple industry is again being continued this year, states the Minister for Markets, Mr. Parker Moloney, under the able direction of Mr. A. E. Hyland, the Australian Director of Trade Publicity in Great Britain and in close co-operation with the National Federation of Fruit and Potato Trades Association, with which most of the firms handling the disposal of Australian fruit in Great Britain are associated. The funds are provided by voluntary levies, by the exporters of fruit to the United Kngdom, from merchants in Great Britain, with the assistance of the Commonwealth Government.

The Commonwealth Government, said the Minister, recognises the valuable work being done in this way on behalf of the Apple industry, and, notwithstanding the depression, a contribution is this year being made available.

The advertising is not confined to any one particular channel, but is designed to make the widest possible appeal by the utilisation of every form available, including press advertising, together with block sketches, special editorials, omnibus and motor van advertising, the utilisation of staircase bands, lamp shades and kite advertising. In addition to this, posters, bills, streamers, price tickets and price over-lays are widely distributed, and by means of exhibitions and displays every effort is made to make the Australian commodity as widely and favorably known as possible.

Sir William Birdwood, who was known so favorably and well to all Australians during the war, considerably helped the industry this year by the assistance rendered at the display at the opening of the Apple season in Australia House. The appearance of the fruit this year was the subject of universal and favorable comment by the large and representative gathering that witnessed the display at the ceremony inaugurating the opening of the season. The prices obtained for fruit this year so far have been satisfactory.

M. ASVARISCH

FRUIT BROKER

Copenhagen - Denmark

Consignments Received. Jorks Passage.

Telegraphic Address: Asvarisch, Copenhagen.

Inquiries for Victoria and South Australia.

to

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528 Collins Street, Melbourne

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The best and most reliable sprayer known. Easy to operate—no chocked nozzles.

Full particulars supplied with pleasure by the manufactures

RUSSELL & CO., Engineers

BOX HILL, E.11

Fruit and Ornamental Trees

Grown for Sale by

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Gembrook Nurseries,

EMERALD, VICTORIA

Telephone: Ringwood 171 Catalogue on Application

Inspection Invited

"FRUIT WORLD ANNUAL."

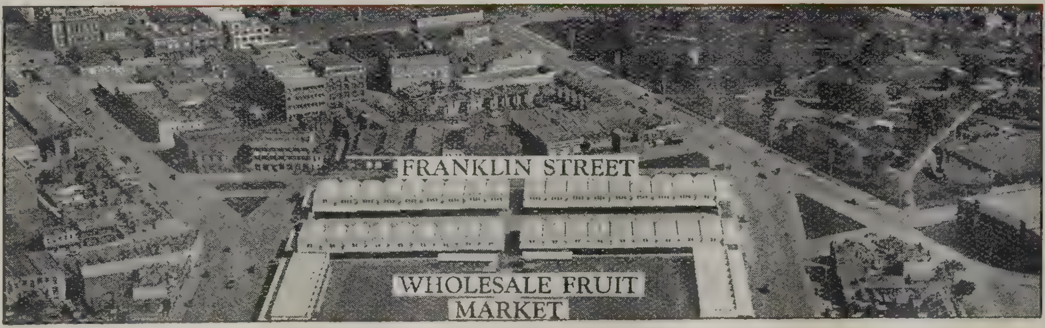
Comprehensive review of Australian and New Zealand fruit industry

"The Fruit World," Box 1944 G.P.O., Melbourne.

The Australasian POULTRY WORLD JUST ISSUED

Secure Your Copy Now — Price 6d. all News Agents.

An Aerial View of Melbourne's Wholesale Fruit Market



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8 Wholesale Fruit Market

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17 Wholesale Fruit Market
'Phone F 2287.

G. Lister Pty. Ltd.
Wholesale Fruit Salesmen
12 Wholesale Fruit Market
Bankers: Commercial Banking Co. of Sydney
For Reference: ASK ANYONE

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34 Wholesale Fruit Market
Exporters and Importers
Specialty—Prompt Returns. Cheque every
'Phone F 1862 Wednesday.

F. CAVE & CO. Pty. Ltd.
PHONE: F 3930
Telegrams "CAVECOFRUT"
F. CAVE, Managing Director
Wholesale Fruit Merchants and Commission Agents — Exporters of Fresh Fruit
9 Wholesale Fruit Market
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WHOLESALE FRUIT MERCHANTS
60 Wholesale Fruit Market
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Box 417
G.P.O.

J. H. Young & Co. Pty. Ltd.

Phone
F 2098

(R. Gordon, Managing Director)

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32 Wholesale Fruit Market
MELBOURNE

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HIGHEST PRICES
and
PROMPT RETURNS

SHIPPING NO. 48 **"WE STRIVE TO PLEASE"**

Clean fruit assured—

when Neptune Sprays are used

Don't take risks with inferior materials—always specify the best. Neptune spraying preparations are obtainable through Agencies and Associations all over Australia, or direct from the Neptune Oil Company Limited.

- Neptune Prepared Spraying Oils "A" and "C."
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- Genuine Black Leaf 40.
- Sicilian Sublimed Sulphur.
- Australian Powdered Sulphur.

Write for our free booklet for full details of above sprays.

NEPTUNE
SPRAYING MATERIALS

NEPTUNE OIL COMPANY LIMITED
Melbourne Sydney Brisbane Adelaide Perth Hobart Launceston

NS4

ELEPHANT BRAND SPRAY

Insist Upon It!

FRUIT GROWERS generally have come to depend on "Elephant" Brand Sprays. They find them absolutely reliable, efficient and of guaranteed quality.

For this Season Use Only
"ELEPHANT" Brand

Spray Now with

"Elephant" Brand
Prepared Red Oil

PRICE IS COMPETITIVE — QUALITY STANDS ALONE

ONCE USED, ALWAYS USED

Remember :—"ELEPHANT" BRAND Stands for Quality

SUPPORT LOCAL MANUFACTURE

WRITE FOR PRICES AND PAMPHLET

JAQUES PTY. LTD.,

are the Actual Manufacturers and Distributors of **"Elephant" Brand Sprays**

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Fruit Markets in the East (by J. H. Lang).

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Save Your Waterlogged
TREES
from
Destruction

Can be adjusted to drain to any depth required

Use the
"HARVEY"
Mole Drainer

Built in all strengths to suit Horse and Tractor Pull

Specially Manufactured to give the grower an efficient and inexpensive drainage system

Write to D. HARVEY
Orchard Implement Manufacturer - BOX HILL Vic.

Canadian-Australian Trade Treaty.

Substantial Reciprocal Preferences

THE TERMS of the trade treaty between Canada and Australia are generally approved.

As a result the reciprocal trade between the two countries should be increased to mutual advantage.

Speaking with particular reference to the fruit industry, the Minister for Markets (Hon. Parker Moloney), stated that among the preferences granted by Canada are the following: Fresh fruit, 20 per cent. advantage; Grapes, duty of two cents a pound removed; dried Prunes, one cent a pound advantage; dried Apricots, Nectarines, Pears and Peaches 25 per cent. advantage; dried Raisins and Currants, existing preference of three cents a pound raised to four cents a pound; Oranges, 35 cents a cubic foot advantage; fruit pulp, one half-cent per pound duty removed; cheese, two to five per cent. preference over others; champagne, duty reduced from nine dollars 30 dozen to seven dollars 44 dozen.

Dried Fruits.

Referring to dried fruits, Mr. Moloney said that dried Prunes, which were now liable to a 10 per cent. duty ad valorem, would be free, with a preference of 1 per cent. per pound against foreign countries. Imports into Canada during the 12 months ended March, 1930, were 15,270,972 lb., valued at £265,946, all of which came from the United States. The concession should provide an avenue for the disposal of our surplus production, and help the returned soldiers engaged in the industry.

Dried Apricots, Nectarines, Pears, and Peaches, which now paid 10 per cent., would be free, with a preference of 25 per cent., ad valorem, against foreign countries, said the Minister.

Raisins and Dried Currants

added Mr. Moloney, were the goods to which preference granted in the past had been of most benefit to Australia, and the proposed further extension of preference from three cents to four cents per pound, equivalent to £18/13/4 a ton, would be of immense benefit to the dried-fruits industry, and should enable Australia to capture almost the whole of the Canadian market for these two lines.

Canada imported in 1929-30 38,302,700 lbs. of Raisins to a value of £486,629, of which Australia supplied £143,508 worth and United States £314,468, the balance being divided between the United Kingdom, South Africa, Spain and Turkey. Australia supplied Currants to the value of £90,992 out of a total of £98,099 imported last year. Fresh Grapes, now liable to two cents per pound duty, would be duty free. Canadian imports of fresh Grapes last year were worth £278,825, almost all of which were from the United States.

Canned Fruits Trade Increases.

Fruit canners state that this trade treaty should enable Australian exports in canned fruits to greatly increase. In 1925 the export of canned Peaches, Pears and Apricots was nil: then a trade treaty was negotiated and Australia gained a footing, the trade increasing from 5,000 cases in 1927, to 100,000 cases in 1930. During the present season it was estimated that 150,000 cases would be shipped.

Under the new treaty the preference on canned Peaches, Pears and Apricots was about 4/3 per doz. 30 oz. tins, or more than 3d. per tin.

As regards canned Pineapples, already Canada has placed a large order for the Queensland product, and a big trade is expected to develop.

Increases in Preference.

A comparison of rates of duty under the new Canadian tariff treaty and that formerly in operation, shows substantial gains in perference for Australian goods. Oranges, for example, which were formerly duty free under the general tariff, are now dutiable at 35 cents a cubic foot, while Australian Oranges are admitted free. On the basis of the average Australian case of 1.84 cubic feet, the preference to Australia is equal to 2/8 a case. The preference on dried fruits has also been increased until it amounts to £18/13/4 a ton. The preference granted to Australian dried fruits in Great Britain is £7 a ton on Raisins and £2 a ton on Currants, and the contrast demonstrates the extent of the preference granted by Canada. Following is a comparison of some Australian exports, and the amount of preference granted under the new treaty and that formerly operating, with the gain in preference to Australia:—

	Old Treaty.	New Treaty.	Gain.
Raisins and Currants, lb.	1½d.	2d.	½d.
Canned fruit .	1⅛d. lb., or 4/10½ case.	2d. lb., or 8/8 case.	⅞d. lb., or 3/9½ case.
Oranges . . .	new item.	1/5½ cub. ft., or 2/8 a case.	2/8 case.
Grapes		1d.	1d.

MISTER COCKY.

(With Apologies to Rudyard Kipling.)

Oh, it's cocky this and cocky that,
The hungry spoon-fed brute,
But it's thank you, Mr. Farmer,
When the corn begins to shoot.
There's a special loan for Cocky
When the corn begins to shoot.

When the costs and int'rest choke him
He's a parasitic coot,
But it's thank you, Mr. Grower,
When the trees are full of fruit.
There's a special smile for Cocky,
When the trees are full of fruit.

He's a burden to the country
When he's down at heel of boot,
But it's thank you, Mr. Squatter,
When the wool is on the route.
There's a special love for Cocky,
When the wool is on the route.

Now the structure's frail and rocky
And the rest have spent the loot,
They've decided Mr. Cocky
Is the saving cause to moot;
'Cause the fact is, Mr. Cocky
Is the Nation's Anchor Root.

—Wallace Spencer, Boyup Brook, W.A., in "The Primary Producer."

Mr. J. P. Gibson.

Fruit is Nature's Best Food

Wonderful Story of a Man's Rejuvenation

Younger at 63 years of Age Than at 23

"Meat Totally Unnecessary."

Health Restored by Right Thinking, Right Diet, Right Exercise.

(By the Editor.)

TO HAVE WON PERFECT HEALTH and the joy of living after years of suffering, has been the experience of Mr. J. P. Gibson, of Norwood-road, Caulfield, Vic., whose articles signed "Rejuvenated," have recently appeared in the "Fruit World."

Although nearly 64 years of age, Mr. Gibson runs six miles every day, has a swim every morning—winter and summer, can work eighteen hours a day without effort; he sleeps under the stars, unless driven by bad weather to sleep under his verandah.

He celebrated his 63rd birthday by running 20 miles without stopping, and at the close of the run was not even "puffed."

His diet is of the simplest. On rising he drinks two glasses of cold water. (Then follows the run to St. Kilda baths, swim and the run home.) His first meal is at 12.30 p.m., when he has fresh fruit in season or Raisins and nuts. For the evening meal at 6 p.m. he has salads and olive oil, wholemeal bread, butter, cheese and fruit.

Mr. Gibson radiates health, good cheer and happiness. He says he is in heaven now—but he has been in hell.

* * * * *

The story of this remarkable change is fascinating.

At the age of 45, Mr. Gibson, to use his own words, was an old man. He had a plentiful meat diet, and though not a heavy drinker, partook of all kinds of alcoholic liquor. He was subject to all the ills of the flesh, including asthma, rheumatism, sciatica, indigestion, influenza, etc. Then, at the age of 52 he had no desire to live any longer. Life was a misery.

But the change came. He read a book entitled "In Tune With the Infinite." Intuitively he felt that life must surely be meant for something better. He determined to seek health, and a renewed outlook, and has not been disappointed.

For the past ten years, Mr. Gibson has enjoyed perfect health—radiant health it might be more truly said.

While in his earlier years Mr. Gibson had never aspired to athletics, he now is making up, for he performs strenuous exercises every day without experiencing tiredness. Life is a joy.

Instead of being corpulent and weighing 13.6, as at 45, he is now slim and athletic, and weighs 10.3.

"I made up my mind to become healthy," says Mr. Gibson. "To accomplish that you need the right outlook on life. Do a thing joyously and it becomes easy. I gave up smoking and the consumption of meat, devoted myself enthusiastically to exercise, and have never looked back since. To grow healthy you must first acquire the joy of living. Grieve over nothing. Eleven years ago I was probably the weakest man in the Commonwealth, now I never feel an ache or a pain. Instead of getting spirit from 'Johnny Walker,' I can draw on the Spirit of Life.

"Right thinking, right diet, right exercise. These are the three essentials for a healthy and free life."

* * * * *

Recently the Chairman of the Victorian Fruit Council (Mr. A. E. Hocking) convened a meeting of representative citizens and organisations connected with the fruit industry. There were present representatives of the Victorian Central Citrus Association, Victorian Fruit Marketing Association, Victorian Railways, Fruitgrowers' Cool Stores Association, Wholesale Fruit Merchants' Association, Southern Fruitgrowers' Association, Committee of Direction of Fruit Marketing (Brisbane), and others interested.

Mr. Gibson told of his rejuvenation, and urged his hearers to grasp the fact that fruit was the world's best food—an essential food—not a luxury. People would get immediate benefit if they would start with one fruit meal a day. Too many people ate fruit to top off "a full tummy." If the people as a whole could get the idea of fruit being the perfect food, it would make for a wonderful improvement in the health of our citizens, and create a tremendous demand for the produce of the orchards.

The Chairman said the opportunity was present for those associated with the fruit industry to secure the services of Mr. Gibson for propaganda to increase the consumption of fruit—lectures and addresses to city clubs and organisations, State schools, mothers' clubs, Boy Scout and Girl Guide meetings, etc.

It was decided by the meeting to ask Mr. Gibson to prepare a draft programme of proposed activities for submission to the various fruit organisations interested, in order to ascertain the extent of the financial support forthcoming to develop this unique "eat more fruit" campaign.

* * * * *

It is of interest to note that in addition to preparing this draft programme, as requested, Mr. Gibson has actively commenced in this useful work for which he is so eminently fitted. He feels assured that the necessary funds will speedily be forthcoming.

Doug.: Who is the boss of your house?

Moug.: Well, my wife assumes command of the children, the servants, the dog, the cat, and the canary, but I can say almost all I please to the goldfish.

Spraying to Control Orchard Pests and Diseases

Codlin Moth — Black Spot — Brown Rot.

"Efficiency Depends on Consistency and Persistency."

A Paper Read by Mr. A. A. Hammond Before the Fruitgrowers' Cool Stores' Conference.

THE APPLICATION of a liquid to plants to protect them from injurious insects dates back about 160 years. A liquid preparation, the most important ingredient of which was tobacco, was sprinkled on the plant with a brush. Later, a crude kind of syringe was used.

The use of a spray pump for this purpose was not used until about 50 years ago. About 15 years later steam power pumps were introduced, and from that time to the present the evolution of the spray pump and spray nozzle has been rapid and continuous.

To-day we have large stationary plants, as well as portable power pumps, operating in the foremost fruit-growing countries.

It has been said by an eminent authority that man's power over the organisms which injure cultivated plants was never so great as it is at the present time. This is, doubtless, true. For this we owe a great deal to France and America. These countries have been pioneers in the invention of improved spraying appliances and the discovery of new insecticides and fungicides.

But, despite these advances, we must confess that here in Australia at least, we have a good deal yet to learn.

In the fight against our insect fungous enemies we have not always come off the conquerors. This is especially true of two of the most destructive fungous diseases, viz., black spot and brown rot.

The question arises—"Are we making the best uses of the known controls for these diseases?" The answer, I am afraid, must be in the negative. The want of

uniformity of action

on the part of orchardists and seasonal variations are largely responsible.

Brown Rot and Black Spot.—The damage done by brown rot and black spot in some seasons is negligible. Growers are lulled into a feeling of false security. The few mummies on Peach and other stone fruit trees are left hanging on the trees to carry over the disease to the following season, which will possibly be a wet one favorable to the development and spread of the fungus.

What has been said respecting brown rot applies, more or less, to all orchard diseases whether insect or fungous.

In the year of heavy crops the loss of 10 per cent. of the fruit by codlin is not cause for concern, but the carry-over to the next season, when the crop will probably be light, is serious.

If the infected fruit which is commonly thrown down at harvesting and which is allowed to remain under the trees until the caterpillars have escaped and found a secure shelter on the trees or in the soil, were collected immediately and destroyed, the difficulty of control in the "lean" year would be considerably lessened.

Although, as has been said, man's power over injurious pests is greater now than ever and this increased power is due largely to the improvement in spraying machines and spraying mixtures, we must not neglect other important means of control, such as, what is known as orchard hygiene, nor should our efforts be relaxed in the seasons when infestation and infection are light.

The three important means of control are spraying, orchard hygiene, and, with respect to insects, biological control.

With regard to biological control,

we have the example of the Aphelinus mali, which was introduced to Australia a few years ago. The value of the parasite as a control for the woolly aphis is well known and needs no stressing.

The case of the lady-bird beetles, which were introduced to the citrus plantations of Florida to control the cottony cushion scale, is another notable instance of biological control. Both the lady-bird and cottony cushion scale are indigenous to Australia.

I do not intend to dwell on the great advantages of biological control further than to say that there is no danger from the introduction of a parasite or predacious insect, such as those mentioned, into a country to control an insect that has been introduced without its natural control.

In most, if not all, cases, the parasite of an insect cannot change its host, but such is not the case with plant parasites, and there is, to say the least, great danger of introducing insects parasitic on certain plants, as they may change their host and become parasitic on plants of economic value.

Taking spraying as the first line of defence in the control of the enemies of the orchardist, there is a tendency, owing to the multiplicity of pests, to save time and expense by applying dual-purpose sprays.

Dual-purpose Sprays.

Combined insecticides, fungicides and ovicides are being successfully used in many orchards of this State. Combined sprays are also used containing internal and contact poisons. The former being added to destroy chewing, and the latter, sucking insects.

There is, however, a danger in using these "cure-all" sprays unless great care is exercised in their preparation. At times more harm than good has resulted from their use.

To give a few examples, the arsenate of lead and lime sulphur combination has been responsible for a good deal of damage to foliage and fruit. The oil-arsenate combination has also been responsible for spray damage.

The best advice that can be given is not to use combined sprays unless it is known that the combination is a safe one, and when combined sprays are used care must be taken that the water is not mineralised, that the spraying outfit is clean and the materials used are mixed in the right proportions and in the proper way. Weather conditions and susceptibility of different varieties of fruit trees are also important considerations.

The time at my disposal will not permit of my dealing with all these matters in detail, but full information can always be obtained by applying to the Horticultural Division of the Department of Agriculture.

For the control of black spot multiple spraying is necessary in wet seasons. It must be remembered that spraying for this disease is preventive and not curative. The mistake is made by many growers to delay spraying in the case of late applications until they notice the fungus on the fruit or leaves.

The fungus does not show up until about a fortnight after infection has taken place, so when spraying is delayed till, say, 5 per cent. of the fruit shows infection, it is very probable that most of the fruit has been infected before the spray is applied. The fungus will develop under the spray.

A programme of spraying, such as the following, has given good results in a season such as the one just past:—

Lime sulphur, 5 gallons to 80 at green tip stage.

Second spray—2 gallons to 80 at petal fall.

Third and fourth sprayings—at intervals of 14 days at a strength of 1½ gallons to 80.

Arsenate of lead and casein should be added to the petal fall spray, and also to the first cover spray to control codlin moth.

In an experiment carried out this season with Granny Smith and Jonathan Apples, the best results were obtained on the Granny Smith with 12.8.80 Bordeaux at green tip stage, 2 to 80 lime sulphur at petal fall, and 1½ to 80 fourteen days later.

The Jonathans were russeted in all cases where Bordeaux was used, and the 9.12.80 formula, that is 9 lbs. of bluestone, 12 lbs. lime to 80 gallons of water, when sprayed at the early pink stage, russeted more than the standard formula of 12.8.80.

The best results on the Jonathans, all of which were practically free from spot infection, was an application of 5 to 80 lime sulphur when the trees were one-third full bloom, followed by 2 to 80 at petal fall.

The importance of effectively ploughing under the fallen infected leaves cannot be over-estimated.

It is a common practice to plough under the fallen leaves in winter and plough them out again in spring, when ascospores which have matured in them are being liberated from the case in which they have been enclosed. It has been proved that the over-wintering fungus in the leaves is preserved by being sheltered under loose earth or other shelter.

The spraying programme for brown rot
is lime sulphur 1 in 9 in late dormant season, 1 in 30 pink stage, 1 in 80 to 1 in 100 after fruit is set. In seasons favorable to the development of the fungus later sprayings should be given before threatening rain. The last spraying of lime sulphur should not be applied within 21 to 30 days before harvesting. Ammonium polysulphide is the only preparation that can be recommended for use when the fruit is ripening.

In addition to spraying, all infected fruit should, as far as practicable, be collected and destroyed during the growing season. When thinning Peaches early in summer the tree should be opened up to light and air by removing dense growths if such exist.

When harvesting, care must be taken not to handle infected fruit at the same time as sound fruit, otherwise infection of the sound fruit will occur and will develop in the cases.

During winter mummies should be collected and burnt. This work is most important, as it is chiefly by the mummies that the disease is carried over to the following season.

Infected wood should be cut out as far as possible when pruning.

Spraying for the control of any pest should be done thoroughly and at the right time. The time of application, which varies in different seasons, is of paramount importance. In the case of fungous diseases most failures to control the disease are due to spraying being delayed until after the fungus had entered its host.

Most fungus infection takes place either during or immediately after rain, therefore, to prevent infection, the preventive spray should be applied if the fruit is unprotected before the rain.

A very successful orchardist has said that efficiency in spraying depended on consistency and persistency.

Dual-Purpose Sprays.

DEALING FURTHER with this subject, Mr. Hammond gave the following hints:—

1. Lime sulphur-casein spreader-arsenate (combined insecticide and fungicide).

Add lime sulphur when vat is half full.

Add casein spreader. Add arsenate in orchard with pump running immediately before application.

Note.—It is immaterial whether the arsenate or the lime sulphur is added first, but these mixtures must not be combined until immediately before use.

2. Bordeaux-oil (fungicide and ovicide).

Bordeaux mixture, 12-8-80.

Emulsified oil, 4 gallons to 80

Dilute oil to 20 gallons. Add to Bordeaux with pump running.

3. Nicotine-arsenate—internal and contact poisons.

Add nicotine when vat is ¾ full: then fill up when adding arsenate.

4. Arsenate-casein-white oil (insecticide-ovicide-spreader and sticker).

Add arsenate when vat is half full.

Add casein when ¾ full.

Add diluted oil.

It is most important to use casein in this combination, as otherwise a blotch spray results which damages the fruit.

Bordeaux-arsenate.
Bordeaux-nicotine.
Lime sulphur-nicotine.
and other combinations can be made, but on no account should Bordeaux and lime sulphur be combined.

Further information on spray combinations can be obtained from the Department on the use of dual-purpose sprays.

Not more than ½ gallon of white oil should be used to the 80 gallons vat, and for late spraying for black spot the maximum quantity of lime sulphur should not exceed 1½ gallons to 80.

The dosage recommended for nicotine sulphate is ¾ to 1 pint to the 80 gallon vat and for casein spreader ½ lb. to 80 gallons.

It is advisable always to combine the different spraying mixtures with the agitator running.

Manuring and Black Spot.

In answer to a question as to the effect of manuring on black spot, Mr. Hammond said that, while no experiments had been carried out in this State to enable a definite answer to be given, there was sufficient evidence to show that it was very probable that manuring had the effect of inducing or reducing the susceptibility to infection.

Excess of nitrogenous manures which induced rank growth lengthened the period of susceptibility.

In experiments being carried out at East Malling Experimental Station, England, it was found that trees which had received a balanced manure for several years were only slightly affected by the fungus, whereas another plot of trees growing under similar conditions and treated in exactly the same way, except tnat they had received no manure, were rather badly affected.

A deficiency of potash and perhaps lime also rendered trees more susceptible to infection.

(To be Continued.)

Victorian Fruit Marketing Association

The monthly meeting of the Victorian Fruit Marketing Association was held on July 3, at the Board Room, Commercial Travellers' Club, Melbourne. Mr. H. G. Colombie (President) occupied the chair. There were also present Mr. J. M. Ward (Superintendent of Horticulture), Executive members—Messrs. Griffeth, Bailey, Carne, Eagle, Webb, Brown, Cave, Harrison, Mellor; other members: Messrs. S. E. Scott, Esmond Russell, J. M. Jacobs, Vail, C. H. Tutton, Godfrey, W. J. Foster, and the Secretary, R. E. Boardman. Apologies were received from Messrs. H. Ford, C. H. Jost and N. N. McLean.

Duty on Base Oils.—A letter was received from the Comptroller-General of Customs in reply to a request from the Victorian Fruit Marketing Association, that it had been decided to admit under by-law tariff item 415A (1) free of ordinary Customs duty, but subject to primage duty, white mineral lubricating oils for use as a base in the manufacture of spraying preparations in Australia, provided security be given that the oil would be used solely for this purpose.

Letter received and decided to reply appreciatively. Motion, Messrs. Griffeth and Harrison.

Reduction of Freight to New Zealand.—The Secretary reported having received a letter from Mr. S. E. Scott (Scott & Edwards), directing attention to the high rate of freight from Victoria to New Zealand and requesting the assistance of the V.F.M.A. in writing to the Union Steamship Company for a reduction. After due enquiries the letter had been sent. The Union Steamship Company had at first replied that as their services were maintained only at heavy loss, no reduction in freight was possible. However, a week later a further letter had come to hand stating that while there had been no material decrease in operating costs, they had agreed to reduce the freight from 2/9 to 2/6 per bushel case. It was decided, on the motion of Messrs. Harrison and Cave, to write appreciatively to the Union Steamship Company for this concession—the more especially because of the circumstances outlined in their letter and the evident desire to help producers.

It was also decided to write to Messrs. Scott & Edwards, congratulating them on the success of their efforts. Motion, Messrs. Griffeth and Carne.

Hail Insurance.—Mr. Brown stated that some form of hail insurance was absolutely vital to the industry. Several proposals were being considered, i.e., for a company to take up hail insurance, also all other district insurances as well. The question was whether it was better to insure through local cool stores or other body with insurable property. It might be possible for an insurance plan to be worked out through the V.F.M.A. In England and in U.S.A. growers of glasshouse products had instituted their own insurance funds. A suggestion had been made to insure fruit at half market value. It should be remembered that after paying the hail insurance the company left the fruit with the growers for disposal. However, he understood that the hail insurance in the Goulburn Valley recently had absorbed the premiums three times over.

Mr. W. J. Foster said that a system of hail insurance had been operating in the Goulburn Valley for the past four years, and the majority of growers now insured. The insurance was placed through their own canning factories. Hail insurance was one of the first and vital factors in fruit production. Premiums were paid on the basis of the damage done; for instance, if a grower had a crop of 200 tons and 100 tons were damaged, he would be paid insurance on the 100 tons. It was decided that a committee of Messrs. Foster, Brown, Scott and Harrison be formed to enquire further into this matter and report.

Association Levy.—Mr. F. R. Mellor gave notice of motion that he would move that the levy for the coming season be reduced to ¼d. per case—⅛d. to be paid each by the growers and exporters. This was half the amount of the present levy, but in his opinion would be ample for the Association's purposes.

Interstate Rail Freight.—Letter received from Mr. F. C. Pyke, Ringwood, stating that whereas the Victorian railways carried 45½ cases of fruit (softwood cases) to the ton, the N.S.W. railways carried only 42 softwoods to the ton; fruit in other cases 40 cases to the ton. The 21 ton freight rate from Melbourne and surrounding stations was about 49/- per ton, and the difference between 45½ and 42 cases per ton was over 1d. per case. He requested the assistance of the Association in having uniformity of freight rates. It was decided to write to the Victorian Railways Commissioners, setting out the details of Mr. Pyke's letter, and requesting the Victorian railways to use their good services with the New South Wales Railway Department in having fruit in softwood cases carried at 45½ cases to the ton.

Address by Prof. Copland.—Prof. D. B. Copland (Dean of the Faculty of Commerce, Melbourne University) gave an appreciated address dealing with the subject of "The Exchange Rate and Its Effect on Budgets and Industry." Professor Copland quoted figures showing that the present high rate of exchange was of benefit not only to producers but to the nation at large.

Letters were received from Mr. F. M. Forde, Minister for Trade and Customs, acknowledging our letter re duty on Australian fruit in Germany and re drawback and by-law concessions on box shooks and stating our requests were receiving consideration.

SUGAR CONCESSION COMMITTEE APPOINTED.

The Minister of Customs (Mr. Forde) announced that the following have been appointed members of the Fruit Industry Sugar Concession Committee:—Messrs. A. R. Townsend, representing the Commonwealth Government (as Chairman of the Committee); W. J. J. Short, representing the Queensland Sugar Board; P. A. Feil, of Hobart, representing the growers of jam fruits; W. Young, of Toolamba (Vic.), representing the growers of canning fruits; A. W. Palfreyman, of Melbourne, representing the proprietary manufacturers of fruit products; A. W. Fairley, of Shepparton, representing the co-operative and State manufacturers of fruit products.

The Fruit Industry Sugar Concession Committee will be responsible for the disbursement to the various sections of the fruit industry of £315,000 a year, which is to be contributed by the sugar industry for three years from September 1, for the benefit of the fruit industry. This contribution is to be utilised for the following purposes:—(a) The payment of a home consumption rebate of £6/5/1 per ton on the sugar used in fruit products manufactured in the Commonwealth, subject to the manufacturers paying such prices for fresh fruit purchased and used in such fruit products as the Committee declares to be reasonable.

(b) The payment of a rebate on the sugar content of manufactured fruit products exported from the Commonwealth, such export rebate to be sufficient to reduce the cost of the sugar content to the Australian equivalent of the world's sugar parity.

(c) The payment of the balance of the contribution, approximately £110,000 per annum, for the promotion of the use and sale of manufactured fruit products in such manner, and subject to such conditions as the Committee thinks fit.

Recent Changes in Sultana Processing and Irrigation Practice in the Mildura District.

(By A. V. Lyon, M.Ag.Sc., Commonwealth Research Station, Merbein.)

General.

DURING THE LAST FEW YEARS, the irrigation practice of the district, and the methods of processing Sultanas, have been subjected to very substantial alterations. The alterations are of special interest, as former methods had previously persisted without any material change for a great number of years.

In reference to the processing of Sultanas, a marked feature has been the replacement by the "cold" and "mixed" dips, of the caustic soda dips formerly used.

Changes in irrigation practice consist of a tendency on the part of the individual to lighter and quicker irrigations, with the accompanying advantages of a shorter period for irrigation for the whole settlement, and a more frequent service.

Fruit Processing.

The new methods of processing Sultanas are now well known, and it might be considered appropriate to give some account of the results which were being obtained.

The final returns for 1930 were not yet available, but indications were that the differences in realisation for the various grades were being maintained.

In comparison with previous years, the outstanding feature of the 1929 final returns to growers, is the very decided differences in realisation according to the grade of the fruit. The average sweat box payment to growers for 4A Sultanas by the Mildura district packing houses in 1929, was £36/5/1; for 2B the return was £22/10/7. A difference of £13/14/6 per ton cannot be ignored, and any movement tending to an uplift in grade must be considered of the utmost importance to the industry as a whole, and to the individual grower.

It must also be noted, that in the Mildura district, where methods of processing which give light colored Sultanas are practiced, the returns are much higher than in centres where the major proportion of the fruit is processessed with the caustic soda dips. These facts clearly indicate that, for all or portion of the Sultanas, according to the growers' circumstances, and seasonal conditions, the dips giving light-colored fruit are giving the best quality and returns.

It is therefore very necessary to examine the position, and to see if there are any steps which can be taken to lift the quality.

In this connection, it is disconcerting to find that the grades in many districts are relatively low, compared with other districts of similar climatic conditions. For example, a comparison of Red Cliffs and Merbein settlements, at April 4, 1931, discloses the following position.

Table showing relative percentages of principal grades, on total pack at April 4, 1931—Sultanas:—

	Merbein (all sheds).	Red Cliffs (all sheds).
Four Crown	17.5%	39.3%
Three Crown	50.0%	49.6%
Two Crown	29.7%	10.1%
One Crown	1.7%	0.8%
	99.9%	99.8%

The table shows in effect a depression of approximately 20% of the fruit delivered at Merbein from four crown to two crown, as compared with Red Cliffs. It is recognised that, in some seasons, the higher proportion of Currants in many districts necessitates later picking of Sultanas, and the increase in weight by the further formation of sugar compensates to some extent for the depression in grade. On the other hand, the price difference between four crown and two crown grades is now so pronounced, that the advantage of increased weight has become relatively insignificant in its effect on the total realisation.

It must also be noted that later picking increases harvesting costs, due to a prolonged drying period and additional handling.

We propose to make a further examination of the position next season. The programme of work should include practical demonstration of processing methods, and meetings of settlers at which the circumstances affecting operations for the particular season could be discussed. Probably the best method of attack would be to select a central drying green, at which all of the various processes could be demonstrated, and the various grades and methods noted.

In addition, it is necessary each season to have, according to seasonal circumstances, a well considered and well-advertised policy in regard to procedure. For instance, the nature of the 1931 season was such that the Sultanas and Currants ripened practically simultaneously. In general, the grade with Currants is improved by delayed picking, while the reverse happens in reference to the Sultanas. It is therefore obvious that in circumstances such as existed last season, the Sultanas may, with advantage, be harvested prior to the Currants. Though these advantages were utilised by a number of growers, far too many cases came under notice where delayed picking of Sultanas resulted in loss of grade, without compensating advantages.

The foregoing will illustrate that some concerted action is necessary in each settlement, in order that a well-considered and more common district practice may arise each season according to seasonal circumstances.

Irrigation Practice.

The report of the irrigation arrangements in the Mildura district during the past four years, and the discussion of the report by the settlers, indicate that continuation of the present arrangements for the periodic irrigations is considered desirable.

There is, however, one alteration that could be made with advantage. There are six periods at which irrigation water is available. At five of these the irrigation is given at a common charge, and at one (March) a special rate is struck. This is tending to faulty horticulture, as settlers in March frequently withhold water on land that is in need of it at the time, until later, when the irrigation is again available at the common charge. Briefly, our proposal is that the water should be available to the settlers on the common rate, at any five of the six periods, and that the special charge should apply to the sixth irrigation when taken by the settler. Arrangements have been made for this proposal to be considered by the Advisory Irrigation Boards, and the irrigation authorities concerned.

Method of Irrigation.

We cannot in any way view our irrigation practice with satisfaction. All research data, supported by the successful practice of growers who are reducing the quantity of water applied, indicate that far too much water is being applied to the land.

In the Merbein, as in other settlements, the reaction is coming in the shape of land damaged by salt and seapage, and in decreased yields.

The data secured in recent years indicates clearly that soil moisture is taken from the soil by the plants only to relatively limited depths, and that on the majority of our soils, adequate irrigation may be secured in approximately six to eight hours soakage at the lower end. The present trend, by which water is applied in sufficient quantities, and in such a manner that the top three feet of the soil is wetted as quickly as circumstances permit, is a movement that should be more generally followed.

In this connection it is pointed out that quicker irrigation by the individual is the only way by which the community irrigation period may be shortened; and that shortening of the community period makes possible a more adequate and a more suitable service.

Vine Diseases.

Brief mention must be made of the present position of black spot of the vine. The canes on the vines show a fairly general infection resulting from the development of the disease in the spring of last year. I do not propose to repeat the warning, and the methods of treatment, which have recently appeared in the press. It must be pointed out, however, that both the recognised methods of attack, swabbing for reduction of last season's infection, and early spraying for protection of new growth, are undoubtedly necessary in the present circumstances.

AURORA PACKING COMPANY.

Opening of Citrus Plant.

A new modern citrus processing plant was officially opened at the end of June by the Aurora Packing Company at No. 2 shed at Irymple. Among those present were—Mr. J. A. Parkes (General Manager, V.C.C.A.), Messrs. J. W. Bowen and W. W. Berry (directors, Henry Berry & Co. Pty. Ltd., and Aurora Packing Co. Ltd.), Mr. Basil Krone (Department of Agriculture), Cr. J. Patterson, and others.

After congratulating the company on the great strides it had made, Cr. Patterson pressed the switch that set the wheels of the new machine in motion.

The machine is specially designed to handle citrus fruits effectively: it is on the same lines as those used in Californian packing houses. First the fruit is put into a soaking dip, after which it is conveyed to wet brushes, where it is thoroughly cleaned of all dirt and infection; thence the sterilising tank for immersion, on to the towel absorber, and finally to the big mechanical drier. The fruit is now thoroughly dried, and after a preservation treatment is given a final brushing polish. The subsequent treatment is that of passing on to the sorting tables, for sorting into the various quality grades, and on to the sizer—provision being made for as many sizes as desired. This equipment was designed and installed by the Lightning Fruit Grader Co., of West Brunswick, Vic. This company has patented a special section of the roller (rubber) to enable fruit to be delivered in exact sizes for packing the 75 to 96 sizes and for the fruit to fit perfectly and tightly into the cases. Girl attendants place cull fruit on belts for removal. After careful handling during the packing the cases are nailed and a neat colored label is affixed.

Dried Fruit Prizes.

Prizes were presented by Mr. Berry, as follows, to Mr. Nat. Barclay, £100 for highest percentage light grade Sultanas (over 10 tons); to Mr. A. W. Tyers, Merbein, for best light grade Sultanas (section over 5 and under 10 tons); to Mr. S. R. Mansell, Mildura, for best ton of light grade Sultanas, 1931 season. Those receiving favorable menion were Messrs. F. Skinner, J. Hogan, G. Bull and P. Williams.

QUEENSLAND FRUITS IN SOUTHERN MARKETS.

Banana Growers from Queensland Negotiate With Interstate Fruit Trade.

Agreement With Merchants and C.O.D. Proposed, but Points of Dispute Have Arisen.

Proposed Agreement Not Signed.

REPRESENTING THE BANANA GROWERS' section of the Brisbane Committee of Direction of Fruit Marketing, Messrs. A. E. Maher (Cooran), and K. R. Hack (Nerang), visited Sydney, Melbourne and Adelaide during July to go into details of Banana marketing with fruit merchants and agents.

All the Bananas grown in Queensland have now been acquired by the C.O.D. by virtue of the powers conferred, after the recent ballot, when 61 per cent. of the growers voted in favor of acquisition.

The Melbourne market is of major importance for the disposal of Queensland Bananas: hence the importance of the negotiations with the Melbourne fruit trade.

Messrs. Maher and Hack brought with them an agreement which had been drawn up by the Banana Sectional Group of the C.O.D. in order that this agreement might be signed by members of the fruit trade in Sydney, Melbourne and Adelaide.

* * *

Meetings of the Melbourne fruit trade were held, and details of the proposed agreement were gone into. On some points the Queensland delegates stated they were prepared to recommend modifications, but on other points a lack of unanimity was evidenced, with the result that the agreement has not been signed.

As regards Sydney and Adelaide, the opinion was expressed that the members of the fruit trade in those cities would be largely guided by the attitude of the Melbourne trade.

The Agreement Reviewed.

The proposed agreement provided for the performance of many duties now undertaken by the trade, i.e., the receiving of the goods at rail, payment of freight, rendering of returns, etc.

There were several new features included, as follows:—

1. (a) Fidelity Bond—to cover Bananas only, and the bond to be held by the C.O.D.

Melbourne agents, however, have notified their willingness to give a general bond to guarantee their financial stability, such bond to be held by the Department of Agriculture, and to cover all transactions with all growers throughout Australia. The trade would not agree to make the bond applicable to Queensland Bananas alone, nor that the bond should be held by the C.O.D. The opinion is strongly held that it would be a mistake to give this specific bond as it would mean that dozens of other organisations would require similar treatment. The South Australian Tomato and Celery Growers' Association, have already intimated that they must have a bond if the C.O.D. gets one.

The question of this proposed general bond is now being discussed with the Department of Agriculture and the Attorney-General's Department.

(2) Another clause provided that disputes should be heard in Brisbane. Against this clause the two main objections by the Melbourne trade are—(a) That as regards the quality of the fruit, this should be settled by the C.O.D. representative on the spot, and (b) regarding the interpretation of the agreement which could be

settled as well in Melbourne, Sydney or Adelaide, as the case may be, instead of referring the matter to Brisbane.

(3) Cartage.—The C.O.D. agreement provides that cartage from rail to merchants' stores shall be done "as C.O.D. may from time to time direct." Merchants and agents, however, desire the present arrangements to stand. The objective of the C.O.D. is to secure, if possible, a cartage contractor to do the work at less than 2d. per case. Against this, the trade state that speed in getting Pines and Beans to market means a big difference to growers in price. and contractors cannot be expected to expedite carting to the same extent as the agents' own conveyances.

(4) Rail Freight.—The agreement provides for the payment of freight on all fruit, whether condemned or not. The argument advanced is that the trade would have the right to sue growers, should any losses be entailed. The trade, however, desire to be relieved of the responsibility of paying freight on Bananas condemned on rail or rejected and sent on to Adelaide.

Further, members of the wholesale fruit trade desire an additional clause inserted in any proposed agreement, namely, that should any consignment develop "squirter" or "wet" after being paid for, payment for future consignments from the same grower should be held up pending ripening, and returns not to be forwarded until the fruit was demonstrated to be not affected with disease.

(5) As regards ripening facilities, the agreement sets forth certain specific instructions. The opposing view is that new proposed ripening and storage conditions have not yet been proved, and that when these new conditions have been proved more satisfactory, then would be the time to insist on their adoption.

(6) Certain trading restrictions were proposed in the agreement, viz., that Bananas could not be purchased for re-consignment interstate without permission being obtained.

Many merchants and agents, however, have had interstate trading connections for many years, thus providing a profitable outlet for the growers' fruit, and the proposed restrictions were deemed to be against the interests of both growers and traders.

(7) As regards paying for the cases in addition to paying for the fruit as set out in the proposed agreement, this point is not conceded by the trade, who state that cases are always sold with the fruit (except in growers' market), and any alteration to this rule would add to trading costs.

(8) The publishing of average prices as set out in the C.O.D. agreement is not deemed to be good trade practice, and would tend to reflect unfairly on those traders who were handling the bulk of the Bananas from poorer districts or where fruit was affected with rust.

* * * * *

Failing the acceptance by the trade of the proposed agreement with Queensland, or the acceptance of a mutually agreeable arrangement, the whole question is thrust into the melting pot; the Queensland growers might fulfil a suggestion which has been mooted—that of opening their own selling floor in Melbourne.

Here again, two differing viewpoints have been expressed. The Committee of Direction desires a central position in the Melbourne Wholesale Fruit Market. Against this the City Council has to recognise that the acceptance of this tenant would decrease the value of the leases of the present tenants. Premises are available for sale or lease in close proximity to the market, and this could be negotiated privately apart from the Melbourne City Council.

Viewing the trade as a whole, and considering the question of trading risk in the light of the proposed fidelity bond, it is noted that a large percentage of the Queensland Banana trade is at present handled satisfactorily by some of the big firms. However, the trade is widespread and the proposed fidelity bond would apply equally to the small as to the large trader.

Limitation of Agents Not Proposed.

Messrs. Maher and Hack stated in an interview that no suggestion was being put forward from Queensland as to the limitation of agents. Some years ago this question was discussed in Queensland, and the growers indicated quite clearly that they did not desire limitation of agents. Hence, in the present circumstances, although the C.O.D. has complete powers, the spirit of the previous decision is being respected, and every avenue of trade is being left open.

Sydney and Adelaide.

Then again, there is to be considered the supplying of the Sydney and Adelaide markets with Queensland Bananas. It is understood that traders in these markets will be largely guided by the Melbourne trade in regard to their attitude toward certain provisions in the proposed agreement.

* * * *

The Queensland Banana trade is a big and important one. Also with regard to other fruits from Queensland the Melbourne market is important.

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In these matters of policy affecting trade, it is to be hoped that conflicting viewpoints can be reconciled.

It is a fine ideal and a workable one to visualise the trade as a whole grower, wholesaler and retailer—all serving the general public. And the consumption of fruit among the general public can be increased by well-directed propaganda.

* * * * *

As regards the present position affecting the sale of Queensland fruits in Melbourne, there appear to be fine points which can only be ironed out in the light of experience, and with mutual goodwill.

It is certain that the Melbourne trade and the Victorian public appreciate Queensland fruits, also that the Queensland growers desire to do the business. With these broad facts as a basis, it should not be impossible to arrive at a mutually serviceable programme to suit all parties.

FROST PREVENTION.

ORCHARD HEATING has been proved to be a payable proposition in Australia and New Zealand. In U.S.A., where crude oil is cheap, it is quite the usual practice to instal smudge pots to raise the temperature during the danger period on frosty nights.

In Australia and New Zealand, growers have used wood, coal and now briquettes have come into favor. The container can be simply constructed by using a kerosene tin. The idea must be kept in mind definitely to raise the temperature—the old idea of creating a smoke is valueless.

Citrus growers will be thinking of orchard heating just now, and in a few weeks later, growers of Peaches and Apples will also be on the alert.

The briquettes manufactured by the Victorian Electricity Commission have been proved in every way satisfactory for orchard heating.

PUBLICATIONS RECEIVED.

"Xenia and Metaxenia in Apples," technical bulletin No. 170, by B. R. Nebel, New York State Agricultural Experiment Station, Geneva, N.Y., U.S.A.

Marketing Australian Fruit in England.

Address by Mr. S. J. Perry, before the Southern Victoria Fruitgrowers' Association.

A VERY INTERESTING review of the development of the fruit export trade was given by Mr. S. J. Perry (Chairman, Victorian Fruit Exporters' Handling Committee), before the annual meeting of the Southern Victoria Fruitgrowers' Association at Box Hill on July 9. There was a large attendance presided over by Mr. L. Pepperell.

Mr. Perry opened his address by going back to the early days of fruit export. He stated that the first recorded shipment was that placed on board the then new steamer "Orient," when 4,828 cases were shipped on March 14, 1888. This was followed by the "Iberia," with 9,250 cases a year later. On March 18, 1890, 8,168 cases were shipped; the bulk of this fruit came from Tasmania, being transhipped at Williamstown. In 1901 Victoria commenced shipping in earnest, 11,649 cases being the total for the year.

Contrast this yearly shipment with the 143,568 cases shipped in the "Karamea," and the "Port Caroline," with 156,312 cases, all shipped last season from Tasmania. Then again, last season Tasmania loaded 41 steamers and Victoria 42.

The differences in ships' temperatures were very marked. In the early days the correct temperature for carrying Apples was considered to be between 40 and 42 deg. Fahr. To-day Apples were being carried at from 32 to 35 deg. and Pears from 29 to 31 deg. (Fahr.).

It was also of interest to contrast the Apples shipped years ago with those exported now. The early shipments mainly consisted of—King of Tompkins County, Peasgoods Nonsuch, Hoary Morning, Dutch Mignonne, Anne Elizabeth, Norfolk Beefing, Emperor Alexander, Kentish Fillbaskets. The varieties shipped nowadays were Cleopatra, Dunns, Granny Smith, Jonathan, Rome Beauty, Rymer, Sturmer, Stone and London Pippins, etc.

Australian growers were often advised that New Zealand Apples made better prices in Germany than Australian Apples. This might be so, but it had to be remembered that New Zealand growers, in planting, have had the experience of the Australian States to guide them, and the Dominion orchards now mainly consist of suitable export varieties. However, when it was taken into account that owing to its Trade Treaty with Germany, New Zealand fruit only pays duty which works out at 1/5 per case less than the duty paid on Australian fruits, buyers would naturally on this account bid this amount (i.e. 1/5 per case) less for Australian than for New Zealand fruits.

Pear Exports.—The early varieties exported were Beurre Clairgeau, Eyewood, Vicars, Black Achan Capiaumonts. The new varieites, however, now favored for export were Doyenne du Comice, Buerre d'Anjou, B. Hardy, Winter Nelis, Josephines, Bosc, Packhams, Madame Cole, Keiffers, Winter Cole, Howells, Marie Louise.

In referring to Williams Pears, Mr. Perry gave the history of the origin of same, according to Mr. F. R. Durham, Secretary of the Royal Horticultural Society, London.

Particulars were also given as to the delicate nature of this variety in South African experience.

(Details of this interesting discourse will be published next issue.—Ed. "F.W.")

Freight Rates.—The history of freight rates as between Australia and England, revealed extraordinary figures. In 1898 the freight rate was 3/8¾. During 1910-11-12 the Orient mail steamers carried Apples and Pears at 2/7½, the P. & O. mail and cargo steamer's rate being 2/10¼. The Aberdeen and Federal lines charged 3/0¾ for Pears and 2/10¼ for Apples, the Holt line 3/3½ for Pears, the German-Australian 2/10¼ for Apples and Pears, the N.D.L. mail steamers 3/3½. When in 1913 the size of the export case was reduced, the freight rate was brought down by 1¾d. all round in all steamers. Up to the war period, the Orient rate of 2/6, the P. and O. and all English lines 2/8½ prevailed during the war period the rate was increased 20 per cent. to 3/-, and in 1920 and 1921 the rate all round rose to 8/- per case. This rate just about "settled" the fruit export industry. A year afterwards it dropped to 6/-, and by 1923 it was 4/6. Since then the freight charge became 4/-, and in 1927 3/6. Last year the operation of the exchange resulted in the present freight charge of 3/7½ per case. The rate for 1932 representing the best possible arrangement the shippers could come to, would be 3/6, Australian currency, plus 22½ per cent., which would equal 4/3¼. As long as the exchange remained at above 15 per cent., 7½ per cent. of the primage would be borne by the different companies, but if it fell below 15 per cent. the companies would pay half the primage, and the cost of exchange would then be equally divided.

Continuing, Mr. Perry said he desired to pay a tribute to the ability of Mr. J. B. Mills, who, representing the Victorian Fruit Handling Committee, had performed good service in carrying out the negotiations on behalf of shippers regarding freight.

As for the future outlook, Mr. Perry did not suppose, while the present British Government was in power, growers could look forward to complete trade reciprocity with the Empire, and it was obvious that without the 30 per cent. favorable rate of exchange, the outlook for export of fruit would be indeed gloomy, with the prospects of good crops in America, South Africa and on the Contient next year. If expectations were realised, there would also be large crops of Apples next year, not only in Victoria, but in Tasmania and South Australia.

Hardwood Cases Advocated.—In his opinion, the best case for export was either that of local hardwood, or pinus insignis. Many growers had found the hardwood cases entirely satisfactory, and were using them exclusively.

When not required for immediate use, they should be closely stacked together in original bundles, and when made up within a reasonable time before shipment there would be no warping.

It was admitted that some growers had received a bad deal in the past from several sawmillers, but this was all changed now, and it would be found that sawmillers were now anxious to give a satisfactory article.

Efficient Rail Handling.—Concluding, Mr. Perry said he could not do less than give credit to the Victorian railways for their handling of fruit. They certainly were giving the fruitgrower and everyone connected with him a fair deal. The railwaymen were faithful servants to the producers of this country.

"Biennial Bearing" in Apples.

Bud Initiation and Development—Carbo-hydrate-Nitrogen Theory—Thinning of Fruit or Blossom—Pruning Suggestions—Effects of Nitrogenous Fertilisers.

Summary of An Address at Drouin, Vic., Under the Auspices of the Victorian Fruit Marketing Association.

By F. M. Read, M.Agr.Sc., Senior Horticultural Research Officer, Victorian Department of Agriculture.

(By courtesy "Journal of Agriculture.")

THE IRREGULAR BEARING of his trees from year to year undoubtedly constitutes one of the most serious problems facing the Victorian fruitgrower. In the first place, were it possible to secure unform cropping over a period of years, harvesting and packing could be carried out with more economy. At present, the equipment necessary for handling the crop in the "heavy" year is not used to capacity in the ensuing "light" year. Again, cool store and shipping space could be more satisfactorily arranged, for the demands each year would not vary to the extent now experienced.

From the marketing point of view the position is even more serious. In the "heavy" year the market usually is depressed; and thus relatively unprofitable for most growers. In the "light" year, although prices improve, the increase generally is not sufficient to compensate for the low yields. Our overseas transactions also are seriously disorganised, for a steady reliable trade cannot be established when supplies cannot be guaranteed from year to year.

It is not suggested that these considerations are new. They are not. The general position has been stated as an introduction, to make quite sure that the very material importance of the somewhat technical remarks which are to follow is not underestimated.

"Biennial" or "alternate" bearing is not a purely local problem. It is experienced in all countries where fruit is grown, and in most of those countries is attracting very careful attention. Practically all varieties, and all classes of fruit, to some extent, are subject to the rule that, if the tree bears a heavy crop one year, a lighter crop the next year is to be expected.

Certain varieties, such as the Rymer Apple, seem to be, by nature, biennial bearers, while others, such as the Jonathan, can be thrown into this habit by any agency which greatly reduces the crop during a particular year. For instance, in Victoria thrips attacked the Apple blossom in the 1926-27 season, seriously reducing the crop and, ever since, on most orchards, large crops and small have followed each other with monotonous regularity.

Let me say at once that I am unable to propound a remedy for the trouble, although it is felt that by the adoption of certain measures its severity may be lessened.

A very heavy crop on a spur-pruned tree is usually followed by a light crop.

"Statesman" Apples in full bloom.—A moderate blossoming is ample.

It does seem desirable to sum up at this stage what is known of this phenomenon so that growers may be stimulated to give it even more detailed attention, and to bring under notice of this Department anything which may be of assistance to those of us who are giving it a great deal of thought.

Factors Affecting Yield.

The number of Apples borne on a tree in any year is dependent on (a) the number of blossoms which form; and (b) the percentage of these blossoms which set and form fruit. In considering the question of biennial bearing, or, in fact, the question of low yield, quite apart from any other considerations, it is essential to keep these two factors quite separate.

Usually biennial bearing is due to the fact that in the light year relatively few blossoms form, while in the heavy year blossoms are excessive. It is to this phase that we propose to devote our attention. Before doing so, however, let me briefly touch on the case of a tree which blossoms freely, but fails to set a satisfactory crop. This is due probably to faulty pollination, in which case suitable cross pollenising varieties should be introduced. On the other hand, it may be due to faulty nutrition of the tree. Nitrogen is often the important element for fruit setting, and an application of, say, 3 lb. of some nitrogenous fertiliser such as sulphate of ammonia per tree two or three weeks prior to blossoming often will improve the set of the fruit.

Let us turn now to the true "biennial bearer"—a tree which flowers profusely one year, and sets a good crop, but in the succeeding year blooms but sparsely and carries little fruit.

Bud Initiation and Development.

Every bud which develops on a tree is a potential flower bud. That is to say, at a very early stage in its formation one cannot say whether the bud will be finally a leaf bud or fruit bud. This is because both buds develop from the same rudimentary materials, and it is mainly the food supply received by any particular bud that decides whether it shall develop into flower or leaf. Most of the dry matter of a plant is built up by its leaves from gases it absorbs from the atmosphere and which (in the presence of sunlight and the green coloring matter of the leaf, chlorophyll) it can elaborate into sugars and starch and similar compounds of a more complicated nature. From the roots come the water, and small quantities of minerals.

It is thought that the balance between the sugars and starches, etc.—the carbohydrates—built up by the leaves, and the minerals, especially introgen, coming from the roots, largely decides whether a bud is to form flower or leaf. It is considered that, at the critical time of the year, when a bud is about to develop in one direction or the other a large amount of carbohydrates from the leaves, with a relatively small amount of nitrogen from the roots is favorable to the formation of blossom buds. This critical period, when blossom buds are first initiated, occurs very soon after the extension growth of a tree has ceased for the year—usually December.

It is easy to pick out a tree which is carrying a light crop by the abundance of its foliage—a fact well known to most orchardists—and it is probably because of its excellent foliage in the light year, and the large amounts of carbohydrates consequently built up by these leaves that, in the ensuing year, the blossoms are so numerous. Conversely, in the heavy year, the leaf area is very much restricted, the carbohydrates elaborated are correspondingly low, and the tendency is for the rudimentary buds to form mainly leaf buds and relatively few blossom buds for the following season.

There can be little doubt that this cycle does go on, especially where most of the fruit is carried on spurs and little use is made of lateral fruiting. Careful measurement in this country, and in others, has disclosed that the leaf area of an Apple tree in its bearing year may be 50 per cent. less than in the non-bearing year. This is due to the smaller number of leaf buds—and therefore leaves—and to the smaller size of the leaves which form. The flowering so lowers the reserves of carbohydrates in the tree that leaf growth in the early part of the "heavy" year is much reduced.

As the understanding of the biennial bearing habit rests on a knowledge of this food balance idea, let us spend a little time on it.

Illustrations of Carbohydrate-Nitrogen Theory.

On the carbohydrate-nitrogen ratio idea one can group fruit trees into three main classes:—

1. The trees of poor growth, which may be termed weakly vegetative. Their relatively scanty leaves synthesise insufficient sugars, starches, and other carbohydrates to develop a strong crop of blossom for the following year, and bring the resulting fruit to maturity. Such trees generally are lacking in nitrogen as well.
2. The fruitful trees of medium growth. These develop a good foliage, and have therefore plenty of reserve carbohydrates with which to develop fruit buds as well. These trees have sufficient nitrogen, but not an excessive supply.
3. Strongly vegetative trees, whose supply of carbohydrates is high, but whose nitrogen supply is also high —this latter fact causing most of the carbohydrates to produce growth. If there is unlimited nitrogen it combines with the surplus carbohydrates to produce growth, and prevents the storage of this surplus in the trees' reserves.

As a further illustration of this principle let us consider the growth of individual laterals. Take the Jonathan as an example—here we get the same three classes:—

1. A weakly vegetative lateral (Fig. 3, C.) if left uncut will produce in its second year very little terminal growth, with small leaves, and will fail to produce good fruit buds on the two-year-old wood. If they do form, these blossom-buds are not strong enough to set fruit. Such laterals obviously demand hard cutting back to limit growth to fewer buds and to induce moderate growth and fruitfulness.
2. There are laterals (Fig. 3, B.) which, if left uncut, will produce moderate terminal growth and fruit buds in the two-year-old wood below. Such laterals may be lightly tipped to prevent the terminal fruit bud (which is sometimes present) from forming, if this is desired. These cannot be cut hard, however, because that probably would cause too vigorous growth and prevent the formation of fruit buds below.
3. There are also the strongly vegetative laterals (Fig. 3, A.) which tend to run to excessive growth and no fruit bud formation. If these are cut at all the resulting growth is accentuated, and they are thrown further from a fruitful condition. Obviously, such laterals should not be cut back. The only chance one has of making them fruitful is to have so many of them that the growth of each is reduced to a reasonable amount.

Many growers apparently do not realise these essential differences in laterals. There can be no rule of thumb in pruning. Every district supports a different type of growth and demands distinct treatment. The fundamental principles on which pruning is based apply to all trees, but their application must vary from district to district, and even from tree to tree.

Finally, let us consider the spurs. Each spur functions as an individual, and although the condition of the tree as a whole to some extent affects the behaviour of the spurs as a whole, nevertheless the conditions in the spur itself mainly decide the behaviour of that spur. Its supply of carbohydrates is drawn principally from its own leaves. It is obvious to any one familiar with fruit trees that spurs, as was pointed out clearly by Roberts, of Wisconsin, fall into several classes. Let us take the case he quotes as an example. In an examination of a large number of spurs of Wealthy Apple trees he found four classes, as follow:—

1. Very short spurs, averaging one-eighth of an inch in length; these were rarely able to form fruit buds;
2. Short spurs, averaging three-sixteenths of an inch in length, which usually flowered, but failed to set fruit;
3. Medium spurs averaging one-half inch long, which were the most fruitful class; and
4. Long spurs, averaging three-quarters of an inch and over, which usually failed to form fruit buds.

Although these measurements may not coincide with our own in all cases, the example typifies what most orchardists know well—that there are differences between spurs, and that these differences are significant. The grower must so regulate the growth of his trees by pruning, manuring, and so on, that he secures the desirable type of growth in the spurs. If a tree is overcrowded with spurs because of the failure of the pruner to reduce their numbers the growth of the spurs will be disappointing and their fruiting unprofitable.

Relation to Alternate Cropping.

In all of these discussions we would appear to have wandered from our main theme of biennial bearing. That, however, is not the case, since the principles discussed are the basis of any treatment adopted for the control of this pernicious habit. The biennial type of growth of such trees is at the root of their biennial fruiting, and unless we can change their growth to a type more uniform from year to year we shall not secure uniform crops of fruit.

As stated earlier, each spur and each lateral of every tree which crops in alternate years has a much greater leaf area in the "off" year than in the "on" year. In December of the "off" year, therefore, carbohydrates are abundant, and the rudimentary buds tend to form blossom buds in nearly every case. These buds flower in profusion the following spring, and act as a drain on the tree's reserves. This results in poor foliage, which elaborates only limited amounts of carbohydrates. In addition, there is the large crop to be matured. The result is a comparative scarcity of the carbohydrates in the "on" year, when fruit-bud initiation should be taking place (December), and relatively few blossom buds form for the following year. This cycle proceeds from year to year.

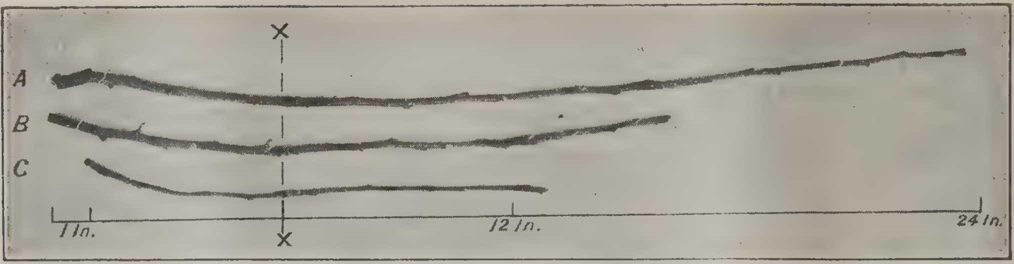
Possible Methods of Control.

To the growers who wish to experiment (and it is hoped that many will do so), the following suggestions may serve as a guide. The general aim will be to reduce the blossoming in the heavy year and so aid growth. This would lead to increased blossoming and less growth in the "off" year.

1. Pruning.

When the spurs are so numerous that in the "on" year their growth is small and they fail to blossom a reduction in the number of spurs prior to this "on" year is indicated. It should be remembered, however, that since the spurs act as individuals it is insufficient merely to reduce their number. Each spur (which if left untouched for a few years is usually a compound structure of many buds) should be reduced in size so that growth is encouraged in those buds which remain.

The encouragement of fruiting on lateral wood will greatly improve the position in varieties such as the Jonathan, which form lateral fruit buds on the two-year-old wood fairly readily if the right system of pruning be



Jonathan laterals.—To left of line x — — — x, 2 years old wood; to right of line, current season's growth.
A, Strongly vegative—unfruitful. B, Moderate growth—note formation of fruit buds. C, Weakly vegetative—unfruitful.

adopted. If new laterals can be induced to spur up each year more regular fruiting must follow than if most of the fruit is carried on spurs which, if they bear one year, rarely bear the next. Here, again, I would like to put forward a suggestion. It is the practice of many growers, in the winter preceding the light year, to leave many laterals uncut, so as to secure the fruit which frequently forms on the terminal bud. This practice, however, in many districts, results in the formation of fruit buds on the lower portions of this lateral, and these are available for flowering in the "on" year when spur flowering is heavy. In the winter prior to the "on" year, however, their usual practice is to cut the laterals, because they do not desire the terminal fruit. This often results in throwing that lateral into growth, and inhibiting the formation of fruit buds. Unfortunately, this is the year when laterals well furnished with new fruit buds would be very desirable to supply fruit in the following light spur year.

In districts where this is so (and there are districts where it is not so), it would be interesting to see the effect of the opposite procedure. Cut the laterals hard prior to the light year so that they will be thrown into growth and will not form flower buds for the succeeding heavy year. Certainly any terminal fruit will be lost. In the following year, i.e., the winter preceding the heavy spur crop, leave the laterals uncut, or cut them lightly. This will then cause them to grow more moderately and to form flower buds for the ensuing light spur year.

In short, this means that the present practice of cutting hard before the big crop, and lightly before the small crop, should be reversed in an effort to secure more regular blossoming. Obviously, it would be some years before the full effects of such an experiment would be seen. It would be unreasonable to look for the main results in the first season of its application. It would be unreasonable also to apply these measures where the type of growth is not as suggested above This case is quoted merely as an illustration of our line of reasoning.

2. Thinning of Fruit or Blossom.

Apart from the control of blossoming and crop which can be effected by pruning, certain other measures suggest themselves. The thinning of the crop in the heavy year is often practised; but it is rarely successful in the control of biennial bearing. I know of growers who have removed more than half the crop without affecting the succeeding blossoming in the slightest degree. The reason for this is not difficult to find. It has been said that the succeeding year's blossom is initiated just at the end of the growing period in any season, say, early December in an average year. It is therefore obvious that, unless the thinning were done very early so that the removal of the fruit would have had time to have its effect on the internal processes of the tree prior to this initiation period, it could have no effect on the formation of blossom buds in that particular year. Thinning of blossom, however, usually has proved effective, and the effectiveness of this procedure even on typical biennial bearers, such as the Rymer Apple, which can be caused to blossom in its usual "off" year, by removing its blossom in the preceding "on" year, indicates that the habit of alternate cropping is not an inflexible character of such trees, but is simply the outcome of certain physiological cycles occurring in the tree. There is every reason, therefore, to believe that, as we come to understand better the internal economy of the tree, we shall be able to effect some control of the tree's behaviour.

Blossom thinning can be carried out in three main ways:—

1. All the blossom can be destroyed on half the trees in the "on" year, so that these bear in the usual "off" year. This method is practised by some growers; but is open to the objection that the two lots of trees then demand quite different treatment as regards spraying, manuring, pruning, etc., and they rarely get this differential treatment.
2. Alternate branches of all trees can be denuded of blossom.
3. Obviously the best system would be fairly uniform reduction in the concentration of blossom throughout the orchard. This does not appear impracticable—I believe it could be done quite well by knocking off some of the blossom by striking the trees with some such weapon as a small branch of a tree. Sprays have been tried to destroy blossom, but it has been found very difficult to regulate the percentage of kill by this method, and there is the danger that one may kill all the blossoms. There is room for experiment in this direction.

None of the methods of removing excess blossoms which form are all that could be desired, and it seems infinitely preferable to try and prevent their formation by pruning or, as will be briefly suggested hereunder, by manuring with nitrogen.

3. Effect of Nitrogeneous Fertiliser.

Experiments based on hte following ideas are at present in progress in Victoria. No results are yet to hand and, consequently, the practices being studied cannot be recommended for general application as yet. They are described as a matter of interest.

It has been said earlier in this article that high nitrogen concentration during blossoming is thought to aid fruit setting, and it appears to be desirable to apply a nitrogeneous fertiliser, such as sulphate of ammonia, two or three weeks prior to blossoming in the light year when it is desired to hold as many of the blossoms as possible. One the other hand, since it is not necessary to secure a high percentage set of fruit in the "on" year, owing to the excessive blossoms, it would appear to be wise to omit the nitrogeneous application in the early spring of the "on" year.

Again, high nitrogen concentration at the time of initiation of fruit buds, say, December, is thought to be unfavorable to the initiation of the fruit buds and to favor instead the formation of leaf buds. It therefore appears logical to apply nitrogen towards the end of November in the "off" year so that the formation of fruit buds for the succeeding "on" year may be depressed, and the number of blossoms reduced. It would be undesirable, however, to apply nitrogen at this period in the "on" year, for this presumably would tend to reduce still further the number of fruit buds for the following "off" year. These considerations would suggest that nitrogen should be applied to biennial-bearing trees two or three weeks before blossoming in the light year, and again in late November of the same year. In the heavy year no nitrogen should be given. This system is being tried experimentally in several districts.

Of course, if these measures proved successful, and the cropping of the trees was made more uniform, the necessity for varying the treatment in this way would tend to disappear, and a dressing of nitrogen in early spring every year might be found to meet all requirements.—"Journal of Agriculture," Victoria.

SOUTH AUSTRALIA.

CONFERENCE AT RENMARK.

Sultana Crop Trials—Marketing Citrus Fruits—Cold Potash Dip Best for Sultanas—Extension of Poultry Industry—Soil Classification.

THE ANNUAL CONFERENCE of River branches of the Agricultural Bureau was held in Renmark on June 18. The Conference was opened by the Director of Agriculture, Prof. Perkins, and Mr. O. Weste occupied the chair.

A presentation to Mr. H. S. Taylor was made by the Chairman; this consisted of a clock and fountain pen. Unfortunately, Mr. Taylor is still considerably indisposed, and was unable to be present, and in his absence his son Gilmore accepted the presentation, and made a neat little speech of thanks. Both Prof. Perkins and the Chairman dwelt on the outstanding personality of Mr. Taylor and his untiring efforts on behalf of the dried fruits industry, and wishing him a speedy recovery.

Mr. F. R. Arndt, Horticultural Instructor, dealt exhaustively with a three-year crop trial of Sultanas at Berri, but as this trial was considered inconclusive it was decided to carry the experiments on for another three years to determine the best pruning methods.

Mr. F. H. Metters, of Waikerie, gave a paper on "Marketing of Citrus Fruits," in which he stated the very great need of citrus growers becoming organised owing to the chaotic state of the market this year.

Mr. A. V. Lyon, M.Agr.Sc., who is in charge of the Merbein Experimental Station under the C.S. and I.R., gave a comprehensive review of water penetration under irrigation, showing many charts of the movement of irrigation water at various times of the year, and the times at which the irrigations are of most use to the functional period of the vine.

Mr. F. R. Arndt and Mr. Lyon further gave a resume of the experiments carried out at various places this year in the use of various dips for Sultanas. In each case

the cold potash dip

gave the best results, although taking slightly longer to dry than other dips.

Mr. C. F. Anderson, Poultry Expert, dealt with the "Care and Management of Poultry." He said that there were few industries connected with primary production which held out more scope for expansion than the poultry industry. An assured market exists in England for any quantity of 2oz. eggs, and eggs of a smaller size should be pulped, for which a good market also exists.

Mr. G. Quinn, Chief Horticultural Instructor, dealt with many questions which were on the notice for answer, among some of which were:—"What is the cause of 'blobs' in Sultanas?" "What is the best type of rack for drying?" "How may the cost of drying be reduced?" "Can we control the off year in fruit?"

Soil Classification.

In the evening session, Prof. Prescott, who is in charge of the soil division at the Waite Research Institute, under the C.S.I.R., dealt with "The Soils and Soil Problems of the River Murray Irrigation Areas." Prof. Prescott outlined the idea of classifying the soils of Australia and Tasmania and eventually getting them classified with those of other countries of the world. His division had invented a "carding" system of soil samples, on which soils are mixed with glue and placed on cardboard; they represent exact profiles of soils, and by this system 50 or more soil samples can be carried about in a small "brief" bag. The Professor showed a map of the Renmark irrigation area with various colors denoting soil types; these types are numbered at present, but will eventually be named to allow of a ready recognition by growers.

At the conclusion of irrigation soil survey, experiments will be carried out in the laboratory and in pots, and subsequently in collaboration with growers, under supervision of the State Horticultural Instructor. In this way, authentic results will be tabulated for the practical use of all growers on the various types of soil. One type known as 6A is of a particularly intractable character and will present an interesting experiment.—"Nemo."

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

THE MONTHLY MEETING of the Committee of the South Australian Fruit Marketing Association was held at Adelaide on June 26.

There were present Messrs. H. J. Bishop (Chairman), M. G. Basey, E. W. Dearman, D. W. Hannaford, J. S. Hammat, F. B. James, R. O. Knappstein, R. B. Pritchard, J. B. Randell, P. R. B. Searcy, G. W. Selth, R. Willsmore, and Secretary. Apologies from Messrs. H. N. Wicks and A. O. Peterson.

Finance.—Financial statement showing balance in bank £283/4/3 was received.

Correspondence.—Letter from Victorian Fruit Marketing Association advising that they had formed a Pear sub-committee, and this committee was collecting information in regard to Pear shipments during the past season, and they would forward on any information that might be useful to this Association at a later date.

Levies.—Secretary reported that levies had been paid to date on 8,000 cases for the 1931 season.

Short Weight Cases of Apples.—Chairman submitted report from London complaining of the weight of cases. The report stated that the net weight of Australian Apples was frequently only 38 pounds against American 40 to 44 pounds. The general opinion was that the report was not correct.

Rules.—The proposed new rules to be submitted to members for confirmation at the next annual general meeting were approved.

Cases.—The Chairman advised that tenders were not yet due for cases, and consequently the matter was deferred until next meeting. The Chairman mentioned there was a possibility of some alterations in the tariff on timber, and that legislation in regard thereto would be introduced very shortly.

Conference re Freight.—The Secretary reported that a full report had been received from Mr. J. B. Mills in regard to the recent conference held in Sydney, and he had written Mr. Mills expressing appreciation at the work he had done at the conference, and thanking him for acting as the representative of this Association. The Secretary also advised having written Mr. Kingsbury, Secretary of the A.O.T.A., Sydney, advising that this Association accepted the new contract and agreement. It was resolved that the Secretary's action be endorsed.

The Chairman pointed out Mr. Mills had done particularly good work in regard to clause 13 of the agreement by having the Force Majeure clause inserted. Also under the new agreement the shipowners bore 7½ per cent. of the exchange until it dropped to 15 per cent., when it would be borne equally by shipowners and shippers.

It was resolved the Secretary write Mr. J. B. Mills asking why the "dump" case was referred to in the agreement, as the Canadian case is now adopted as the standard. As the measurements were "dump" case 1ft. 7in., Canadian case 1ft. 5¾in., the Committee wish to know whether both cases would be recognised as standard by the shipping companies.

Conference Expenses.—It was decided that the Secretary write the Victorian Fruit Marketing Association offering to reimburse a proportion of Mr. J. B. Mills' expenses for attending the Sydney Conference.

Melbourne Conference.—Mr. Boardman, Hon. Secretary of the Australian Apple and Pear Export Council, advised that the Interstate Conference would be held in Melbourne on Wednesday and Thursday, August 19 and 20. The amended constitution embodying suggestions received from the different States would be submitted for consideration at an early date, and the proposed agenda was submitted and approved, subject to the following suggested additions:—

(1) Co-ordination to insure spaced arrival at destination.

(2) Nomenclature for fruit to be uniform throughout the States, as the different names in use at the present time were confusing, especially for export.

Conference Delegates.—It was unanimously decided that Mr. H. J. Bishop and Mr. J. B. Randell be appointed as delegates to attend the Melbourne Conference. Secretary to write and ascertain if the Research Committee would be held simultaneously with the conference meetings, and if so, Mr. H. N. Wicks to be appointed as delegate to attend Research Committee meetings.

Apple Grading.—It was resolved that at the July meeting each delegate should bring a few Apples for the purpose of obtaining samples to be taken to the Melbourne Conference to represent the idea of the Committee of this Association as to special, standard, and plain grades.

Uniform Fruit Inspection.—The question raised by Mr. F. B. James in regard to uniform fruit inspection was deferred until after the August Conference in Melbourne, when an endeavor would be made to get a conference of all local inspectors to discuss the matter, with a view of obtaining uniformity.

Research Sub-committee.—The Research Committee reported that manurial experiments were now being carried out in five different orchards under the supervision of the horticultural inspectors, and the committee is giving serious attention to the question of codlin moth control.

SOUTH AUSTRALIAN VISITS THE EAST.

Increased Trade Possible.

Mr. M. J. Vickers, of Lenswood, South Australia, has just returned from a visit to China, Japan and the Near East. He is impressed with the possibility for Australia to increase her trade in fruit, also wool, flour, and frozen meat.

Trade generally in Hong Kong, Shanghai, Japan and other places was on a larger scale than previously imagined by Mr. Vickers. While, of course, the spending power of the teeming millions was small, nevertheless it was evident that there was a large spending power amongst the more wealthy and the middle classes.

To illustrate the way vegetables can be carried, Mr. Vickers mentioned that head Lettuce from Oregon shipped to Japan was enjoyed by the passengers right through to Sydney, these Lettuce being quite fresh after being cut over six weeks.

Mr. Vickers is convinced that Australian Apples are superior in flavor to the American fruits; the Winesap is a beautiful Apple in appearance, firm and rosy red, but could not be compared with the flavor of fresh Australian fruits arriving at the same time. For instance, cold-stored American Winesaps in May and June were a long way behind the flavor of, say, the increasingly popular fresh Australian Granny Smith. This was quite noticeable on his recent trip to the Near East. He noted that the Granny Smith was greatly favored for its flavor and carrying qualities. Passengers to Eastern countries quite frequently included cases of Granny Smiths among their luggage.

At their orchard at Lenswood, near Forest Range, South Australia, the Messrs. Vickers grow substantial quantities of fruit, particularly Apples for export, including the varieties Jonathan, Rome Beauty, London Pippin and Cleopatra.

Mr. M. J. Vickers is on the Committee of the South Australian Fruit Marketing Association.

Comparisons with U.S.A.

A few years ago Mr. Vickers was in America, when he visited the orchards of the Pacific Coast, and subsequently went across to New York. Speaking of Wenatchee, that noted Apple-growing centre in the State of Washington, Mr. Vickers noted the trees were about 30 ft. apart, and still the boughs were touching. The soil was a deep alluvial character, about 20 ft. deep. Lucerne was grown as a perennial cover crop, the cultivation being that of discing the lucerne. The roots penetrated 6 ft. to 8 ft. in the soil, thus keeping the soil open and enabling the irrigation water to be carried deeply to the roots of the trees.

In another section of the State of Washington Mr. Vickers found a grower in a substantial way who did not have irrigation to depend on. This grower practised clean cultivation as in Australia, thus keeping a fine tilth of soil mulch to conserve moisture.

All the Apples and Pears on the U.S.A. Pacific Coast are now washed to get rid of the spray residue.

Central stationary spray plants are popular.

The Case for Potash.

Its Relation to Nitrogen.

(By R. A. Boyle, M.Sc., A.A.C.I.)

HOW OFTEN is the fruitgrower, who produces a crop that removes relatively large quantities of potash, heard to remark: "I have tried potash again and again, and I can never notice the slightest benefit." To suggest that the reason might be because he has never used enough nitrogen might appear strange, but nevertheless, it is a line of thought that is engaging more than one experimental station at the present time—that of the so-called "nitrogen-potash balance."

The more one reads what has been written concerning manuring, and the more one hears of the experiences in experiment of expert investigators, and of growers themselves, especially where fruitgrowing is concerned, the more uncertain one is apt to become about the need in general for applications of potash to the soil. It is often as easy to argue in favor as it is against. In the midst of these contradictions, the grower is often in a quandary.

Chemical analyses of soils, show that a large percentage of the potash is contained in that fraction known as the clay. In a heavy clay soil the percentage is so high that if it were all available for plant growth, it would suffice for centuries of continuous cropping. Soils show every gradation from sand on the one hand, to clay on the other, and it is not a very difficult problem for the farmer of average experience to determine roughly these gradations on his own acres. Pure sand contains practically no potash. Therefore without going any further into the mater of the availability or otherwise of potash, it should be clear that if a crop removes potash from the soil, then the less clay that soil contains, the more likelihood there will be for applications of potash for that crop. All crops do require relatively large quantities of potash, and if the crop is removed from the soil, then we arrive at a first fairly definite recommendation:—

The lighter the soil the more need there will be for potash.

Analysis has determined the amounts of nitrogen, phosphates and potash taken up from an acre of soil by every well known crop. The following are some of the figures:—

Crop.	Nitrogen. lbs.	Phosphates. lbs.	Potash. lbs.	Lime. lbs.
Wheat..	50	20	40	—
Tobacco..	90	20	95	—
Potatoes	25	12	70	—
Tomatoes	90	30	60	—
Fruits—				
Oranges	36	16	42	—
Lemons	30	12	54	—
Apples	105	35	145	125
Pears	140	55	215	150
Peaches	76	18	72	117
Bananas	84	22	271	102
Vines	80	30	100	70

Potash has been observed to function in plant life as follows:—

(a) It promotes the formation of starch and sugar in the leaves.
(b) It plays an important part in the growth of stems and the formation of grain.
(c) It hardens the soft new growth promoted by nitrogen.

Thus it tends to produce quality, rigidity of growth, and imparts health and vigor to the tree or plant.

Plants grown with a shortage of potash exhibit the following characteristics:—

(1) Leaves exhibit a poor dull color and tend to die early at the tips, and along the edges.
(2) Stems are weak. Plant does not stand up well.
(3) Potash starved plants are the first to suffer in a bad season, or to succumb to disease.
(4) Fruit trees show leaf scorch and defoliation and restriction of root growth.
(5) Stunted growth and small grain.
(6) Over nitrogen effects are more easily produced.

As a result of experience and experiment, potash, in addition to being applied almost invariably on sandy soils for most crops in most countries is found to be beneficial in almost any soil in Great Britain and Europe, for root crops. The application of potash for fruit growing, however, remains one of the controversial subjects in manuring.

Experimental and observational results, where potash manuring is concerned, in Australia, present many contradictions to European practice. There are few crops, except possibly, sugar cane and market and home gardening crops, where potash applications have been definitely recommended.

In most experiments in Australia on the manuring of potatoes, which are notorious devourers of potash, additions of that plant food have given negative or non-payable results. A possible explanation might arise from the following ideas:—

Exactly how much potash in any soil is actually available has not yet been accurately determined, but it is practically certain that it is definitely limited. There is apparently a certain small quantity always immediately available and a certain further quantity which may be made available by treatment with various substances, e.g., lime, sodium, humus and artificial fertilisers themselves. In any soil, only a certain definite quantity of the total potash content can be made available by whatever means. Agricultural chemists are busy at the present time studying this problem, and before very long, we hope, they will be able to tell us with more certainty what this quantity is. The idea that lime liberates potash has recently been questioned by certain workers in America; in fact, they have shown that additions of lime may actually depress the availability of potash. Superphosphate, however, they find, appears to increase the available potash. Whether this is due to the phosphate or gypsum or both, has not been determined; but the idea is gaining ground that applications of phosphate and nitrogen are very important factors in the liberation of potash.

Now, soils, so far as their relative contents of sand and clay are concerned, do not differ very much from one side of the world to the other, but climatic conditions do differ and so does the total natural content of available plant food, dependant upon the length of period under cultivation. It may therefore probably be for one or both of these reasons that Australian soils differ so much from European soils, where potash applications are concerned. As regards climate, both rainfall and sunlight may have an influence on potash effect, and this influence is likely to favor most parts of Australia. Whether the benefits we may derive in this regard will compensate for continual withdrawal of the limited supplies of exchangeable or available potash in the soil, however, is a matter of greater concern.

There is, however, one other possible difference, at least, in soil treatment and condition which may account for a difference in the effect of potash in the two sides of the world, and that relates to what is termed the nitrogen-potash balance. It was stated above that potash counteracts over nitrogen effects.

Nitrogen stimulates vegetative growth, but, in excess, this growth is soft and weak. Potash hardens and strengthens this growth.

When Sir John Russell was lecturing in Melbourne, he was asked what he would advise in a case where too much nitrogen had been applied to Tomatoes so that the leaves were soft and drooping; Sir John's advice was to apply potash immediately as it countered the effects of nitrogen.

This theory of balance suggests possibilities for forcing growth, and so increasing further our crop yields, at least as far as some other uncontrollable factor will allow us to go. Take for example potatoes. It has been found by a series of experiments in Victoria, that in certain classes of soils a mixture of 6 cwt. of super. and 1 cwt. of sulphate of ammonia per acre gives the best yield out of a number of mixtures tried. An addition of 1 cwt. of sulphate of potash to this 6:1 mixture does not improve the effective yield. Also a mixture of 6 cwt. of super. with 2 cwt. of sulphate of ammonia does not in general increase the yield; whilst no doubt the plants carry a heavier vegetative growth. No doubt also, 3 cwt. of sulphate of ammonia would give a lower yield of tubers still, whilst a further addition of nitrogen would probably give rise to "all top and no tubers."

Now, if there is any significance in a nitrogen-potash balance, it may have been that whilst there was enough potash being made available in the soil to balance the nitrogen in the 6:1 mixture, there would not be enough to balance it in the 6:2 or 6:3 mixture, and that if potash had been applied the plant might have borne tubers which had increased in number and size proportional to the increased vegetative growth. Such increase in crop yield could, of course, only be obtained up to the point where some other factor, e.g., water or sunlight became the limiting one.

The limiting water factor would, of course, for instance, most likely, prevent any increase in crop yield, as a result of this progressive balance of plant food, in our wheat areas. In higher rainfall areas, like the coastal regions of Queensland, where sugar, Bananas, and Pineapples are grown, potash does often become a limiting factor.

The possibilities, where this nitrogen-potash balance is concerned, seem particularly attractive for fruitgrowing in irrigated areas. It is known by most fruitgrowers that a considerable excess of nitrogen alone may cause fruit yields to suffer at the expense of leaf and wood, and also in quality. Even the citrus tree, which will consume large quantities of nitrogen, and bear proportionately heavy crops may develop "puffy and raggy" fruit, due probably to an unbalanced ration.

In these circumstances, to suggest smaller applications of nitrogen, is not necessarily the only solution. Provided again that water is not a limiting factor, it may be possible to assist the tree to bear fruit in keeping with its increased vegetative growth, and to considerably prolong its life under such forced feeding with nitrogen by maintaining the balance with potash. Of course, phosphates and even other elements may also become limiting factors, but as a rule, phosphates have already been supplied, and yet not prevented all over-nitrogen effects.

Unfortunately, in order to test the effect of a better nitrogen-potash balance, on crop yield and the life of fruit trees, relatively long periods would be required. To derive the fullest benefit, progressive budding over or breeding might have to be undertaken; the capacity for a tree to absorb more plant food and transform this food into crop is a state of affairs which might only be effectively reached in stages. Indications of the possibilities to be derived, however, should be obtainable from experiments on annuals, and even where fruit trees are concerned, an improvement might be made within a few years.

It must not be forgotten that phosphates also enter into this balance. The main function which phosphates perform in plant growth, is to assist in the regenerative processes of the plant, i.e., they tend to promote early and profuse blossoming and fruit ripening. Both nitrogen and potash tend to delay ripening, and therefore phosphates must be introduced to correct this tendency.

Forcing greatly increased yields by balanced feeding is by no means a new idea, and, moreover, is not a proceedure which necessarily results in "Killing the goose that lays the golden egg." Take, for example, the milk cow, the faster times of race horses, the egg-laying records of hens, and, getting nearer the point, the improvements in yields and stability of the wheat plant, sugar cane, maize, pasture grass, etc., mainly brought about by scientific breeding and feeding.

It is noteworthy in connection with this idea of balanced manuring that the demand by farmers for complete manures with higher percentage contents of nitrogen and potash has increased quite markedly throughout the world within the last few years.

CONTROL OF RUST IN PEACHES.

Several varieties of Peaches on the Murrumbidgee Irrigation Areas were severely affected with rust during the past season. The varieties Palora and Selma are particularly subject to this disease, whereas Golden Queen, Pullar's, Peak, and other varieties are less susceptible.

The N.S.W. Minister of Agriculture (the Hon. W. F. Dunn, M.L.A.), advises growers to make every endeavor to keep the disease under control by the adoption of suitable preventive measures, as the fruits of some varieties, when severely attacked, are rendered useless for canning purposes. The intensity of the disease varies with the nature of the season. Moisture in early spring and summer encourages its development, and it may cause serious loss during warm, moist climatic conditions.

All diseased wood should be removed and burned with the prunings. The leaves, which are buried in the first deep ploughing, should then be kept buried by ploughing or cultivating subsequently at shallower depths.

Arrangements should be made to spray the trees with Bordeaux mixture (winter strength, 6-4-22) before the buds burst in the spring. When severe defoliation has occurred, it is advisable that every effort be made, by good cultivation and the application of fertilisers, to invigorate the trees during the growing season.

Leaflets on "Rust of Stone Fruit Trees," and on the preparation of Bordeaux mixture can be had free of charge from local officers of the Fruit Branch, or on application to the Under Secretary, Department of Agriculture, Box 36A, G.P.O., Sydney.

Overseas News and Notes.

European Fruit Crop Prospects—Russian Fruit Exports—U.K. Importations of American Prunes.

HEAVY BLOOM of Apples, Pears and Cherries, reported in most of Continent, and prospects appear better than last year. Season fully three weeks later, reducing possible frost injury. Plum bloom heavy, but set is irregular. Switzerland is anticipating record crop even exceeding that of 1929. German bloom especially good in Rhine and Bergstrasse districts. In Styria district, Austria, the Apple bloom was medium and comparable with last year, while Pear bloom was very good. Nearly all Italy reported heavy bloom, but Grapes and Apricots in Tyrol badly damaged, and weather continues unfavorable. Some frost damage in France, but blossoming generally good. Holland crop promises to be large, barring bad weather. (Cables, May 18, from U.S.A. Representatives in Berlin and London.)

Shelled Almonds.

ESTIMATED PRODUCTION shelled Almonds in Mediterranean Basin, 90 per cent. of last year on account of frost damage. Present prospects somewhat below a year ago in Italy and Sicily, but better in Spain, French Morocco and Portugal. Prices during April increased substantially in Italy, due to frost damage, but movement lacked support from consuming countries, and prices have declined slightly. Spain is securing foreign business and maintaining increased prices. (Agricultural Commissioner Nielsen, Marseille, May 15.)

Russian Fruit Exports Decline in 1930.

Germany Most Important Market.

EXPORTS OF RUSSIAN FRUIT during 1930 amounted to 7,150 tons, a decline of 8,960 tons as compared to 1929, when 16,110 tons were exported, according to information published in the British Empire Marketing Board's "Fruit Notes." Exports during 1930, although smaller than in 1929, were somewhat greater than during the two crop years (October-September), 1926-1927 and 1927-1928. Exports of fresh fruit consist mainly of Apples, Grapes and Pears, with Apples by far the most important, accounting for almost 90 per cent. of the total. Converted to boxes, the Apple exports in 1929 amounted to around 790,000 boxes, and in 1930 to 360,000 boxes.

Germany is the most important market for Russian fruit, taking on an average in 1929 and 1930, about 61 per cent, of the total direct exports. The remainder of the exports were distributed as follows:—Denmark 10 per cent., Sweden 9 per cent., United Kingdom 6 per cent., Finland 5 per cent., and all others 9 per cent. It should be noted, however, that the British market gets a larger percentage of Russian fruit exports than is indicated by these figures, because of re-exports from other European countries. Russian Apples are carefully graded and well packed. Both boxes and barrels are used as containers.

United Kingdom Imports of American Prunes.

THE UNITED KINGDOM ranks second only to Germany as an importer of Prunes. During the last ten years British markets have taken between 37,000,000 pounds to 50,000,000 pounds annually, imports for the decade averaging 43,000,000 pounds. The average for 1926-1930 was practically the same as for the five preceding years, but nearly double the pre-war average. Between 1,000,000 pounds and 3,000,000 pounds are afterwards re-exported.

The United States is the principal source of those imports, in recent years supplying approximately 88 per cent. of the total. Though total imports during the last ten years have been maintained at about the same level, the demand for United States Prunes has materially advanced, average imports from the United States, amounting to 38,624,000 pounds during 1926-1930, or an increase of 15 per cent. over the 1921-1925 average. Imports from the United States reached the peak in 1927-28, but during the next three years fell off substantially. (Reports from U.S.A. Foreign Crops and Markets.)

APPLE AND PEAR EXPORT.

A Satisfactory Season.

THE APPLE AND PEAR EXPORT season for 1931, just closed, has been satisfactory. Good prices have, on the whole, been realised for the bulk of the shipments. Added to this the high rate of exchange has been all in favor of growers who exported fruit.

A special feature of the past season has been the large export of Pears from Victoria. The Pear market in London has been exceptionally good, an evenly strong demand having prevailed up to last week. The following totals will give an indication of the shipments that have been made from Victoria and Tasmania:—

	Bushels.
From Hobart—	
Apples	1,990,773
Pears	96,414
From Beauty Point—	
Apples	305,980
Pears	21,465
Grand total	2,414,632

The ports of discharge for these Tasmanian Apples and Pears were as follow:—

	Bushels.
London	1,416,816
Liverpool	365,721
Hamburg	343,694
Hull	154,830
Glasgow	62,341
Rotterdam	29,892
Dunkirk	25,728
Bremen	15,610

From Victoria.

	Bushels.
For London—	
Apples	371,287
Pears	203,575
For Germany—	
Pears	4,019
For London—	
Plums	5,591
Grand total	584,472

	Bushels.
London	163,458
Hamburg	79,227
Liverpool	46,331
Glasgow	31,549
Hull	27,630
Rotterdam	12,599
Bremen	10,387
Dunkirk	106
Total	371,287

To summarise the position, Victoria and Tasmania shipped to Europe 2,999,104 bushels of fruit. Of this quantity, 1,789,440 bushels, equal to 60 per cent., were shipped to London, which leaves a balance of only 1,209,664 bushels, or 40 per cent., shipped to all other ports in Great Britain and the Continent.

The three remaining exporting States have shipped the following, their figures also including exports to Asia:—

Fruit Shipments
United Kingdom
and the Continent

W. D. PEACOCK
& CO.
London Fruit Exchange,
Spitalfields, London, E.1.
AND HOBART, TASMANIA
Solicit Consignments
The High Standing and Long Experience of this Firm is a Guarantee that the Best Interests of Consignors will be conserved.

F. W. Vear PTY. LTD.
Fruit & Vegetable Salesmen
Commission Agents
28 New Wholesale Fruit Market,
Melbourne, Victoria
Highest Market Rates Assured
Prompt Settlements

"YARRA"
QUICK BREAKING
White Oil Emulsion
Easy to mix, Effective in result,
Economical in quantity.
Use Now
On Citrus Trees.
PARSONS & JAQUES
Manufacturing Chemists,
6 Patterson St., 155 Yarra St.,
Abbotsford, Vic.
Tasmanian Agents—
N. L. HOPKINS, HOBART.

	Apples. Bushels.	Pears. Bushels.
New South Wales	50,827	5,277
South Australia	27,929	4,231
West Australia	468,166	14,171
Totals	546,922	23,679

The grand total of fruit exported was 3,569,705 bushels.

The large increase in the population in Near Eastern countries suggests increased possibilities for the development of the Australian export trade.

Grapefruit has become tremendously popular in Great Britain, the quantity sold last year being seven times that in 1924.

Canada also likes Grapefruit, having imported 26,000,000 lbs. (valued at £252,000), from U.S.A., in the twelve months ending March, 1930. Can Australia secure a share of this business?

Tasmania.

State Fruit Advisory Board.

A MEETING of the State Fruit Advisory Board was held at Launceston on July 7. There were present: Messrs. B. J. Pearsall (Chairman), W. H. Calvert, M.L.C., A. H. Weedon, F. Harrison, B. H. Saunders, J. H. Astell, P. H. Thomas (Secretary).

Mr. T. Burnaby, Senior Fruitgrowers' Representative, was also in attendance.

Imperial Fruit Show.—Mr. W. H. Calvert, M.L.C., was congratulated on his success at the Imperial Fruit Show, England. A vote of appreciation was recorded for his services on behalf of the Tasmanian fruit industry.

Exchange on Fruit Consignments.—The Secretary reported the legal opinion of the Board's solicitors, and it was decided to supply a grower who had furnished account sales for examination with all the documents and legal advice provided the grower would take legal action to recover the exchange due.

Advertising Tasmanian Fruit Abroad.—After the Secretary had presented the report received through the Agent-General from Mr. A. G. Hyland, Director of Trade Publicity, regarding the advertising of Australian Apples and Pears in U.K., it was decided to send this item forward to the Interstate Conference.

Fruitgrowers' Conferences.—The dates fixed were:—Launceston, July 28; Hobart, July 30.

Incorporation of Advisory Board.—It was decided to approach the Minister for Agriculture requesting legislation to incorporate the Board as a statutory body and empowering it to execute on behalf of growers any authority conferred upon it.

"Turakina" and "Trojan Star."—A resolution was carried favoring immediate legal action to press the claims in regard to the damaged consignments on "Turakina" and "Trojan Star."

After the Secretary had reported the action already taken through the Agent-General and the National Fruit Federation, it was decided to send a cable asking that matters be expedited, as growers were becoming restive.

Messrs. Burnaby and Burcham were thanked for their services as wharf representatives.

Apple and Pear Export Council.—Messrs. B. J. Pearsall and W. H. Calvert, M.L.C., were appointed to represent the Board at the meeting of the Australian Apple and Pear Export Council on August 19 and 20,

Interstate Freight Reduced.—Correspondence was received from Huddart, Parker's and Union Shipping Co. notifying that the freight on fruit from Hobart to Brisbane direct had been reduced to 2/1 per case.

The Secretary was instructed to thank the shipping companies for their action, and request that reductions be made in freight rates to other mainland ports.

Committees of Agents.—With regard to present charges on fruit shipped to Sydney, Brisbane and Melbourne, it was decided: "That the Committee of Agents be requested to adopt the 7½ per cent. commission all round and eliminate the 6d. per case minimum charge, also the stamps and stationery item and to reduce the rates for receiving and delivery. A uniform statement of charges was also suggested." Carried.

Sugar Concession Committee.—Mr. B. J. Pearsall was appointed as the Board's nominee for the jam fruits section of the Sugar Concession Committee.

The fruit bill of Great Britain is estimated at £31,000,000 annually. The overseas dominions are steadily increasing their share of this important trade.

Figures showing how the fruit fly can multiply from one to 8,250,000 in 3½ months have been compiled by the W.A. Government Entomologist (Mr. Newman).

PEAR EXPORT FROM AUSTRALIA.

Three-quarter Bushel Case Favored in London.

THE following is an extract from a letter, dated June 30, 1931, received by the Superintendent of Horticulture (Mr. J. M. Ward), Department of Agriculture, Melburne, Victoria, from Messrs. McQueen & Son, fruit exporters:—

I have your letter of the 27th instant, re fruit sold on the other side, for which I thank you. I have carefully noted the contents.

Regarding Pear cases, I promised to let you know how the three-quarter bushel got on; and in this connection I cannot do better than give you a copy of the replies sent by my agent to a series of questions which I submitted to him. They are as follows:—

Re "Jervis Bay" and "Largs Bay" Pears.

(a) The Pears arrived in a satisfactory condition.

(b) With regard to the trays, you will notice that the price realised for trays was almost 1/- more than for cases, ex the same steamer, but our opinion is, after talking with the various customers, that there is really not much preference given to trays, and consequently we would advise in future the using of three-quarter bushel boxes.

(c) As we stated above, practically the whole of these Pears were sold in London.

(d) We consider the quality to be very good. It certainly compared very favorably with American Pears, and the McQueen pack was quite as good as anything discharged from the same steamers.

(e) Our experience, from the arrival of the last two or three steamers from Australia, with Pears, has proved that there is really not very much advantage in packing in trays, and also the customers do not take to the long flat box, owing to the looseness of the pack. We would accordingly, from experience this year, strongly recommend the three-quarter bushel box.

RIDLEY & HOULDING
Covent Garden Market
LONDON
Specialists in Australian Fruit.
Solicit consignments of Apples, Pears, Etc.
Our record of over 30 years' standing in the handling of Australian fruit, with satisfactory results, is a recommendation for growers to ship their fruit to our house.
Representatives—
International Fruit & Mercantile Company Ltd., Melb., Vic., Australia; and A. J. Walshe & Co., Hobart, Tasmania.

THE
FRUIT WORLD ANNUAL
& ORCHARDISTS' GUIDE
For 1932
will shortly be going to press.
Reservations for Advertising Space now being Received.

J. G. MUMFORD
(Established 1906)
Fruit & Vegetable Salesman
Account Sales Posted Daily
APPLE EXPORTER
"Fruit Exchange,"
449-451 FLINDERS LANE
and
No. 35 Wholesale Fruit Market.
MELBOURNE
Reference—Satisfied Growers in all States

IMPERIAL FRUIT SHOW.

Victorian Grower Awarded Second Prize.

At the recent Imperial Fruit Show in London, four cases of Yates sent as an exhibit by Mr. J. B. Savory, of Upper Beasonsfield, through the medium of the International Fruit and Mercantile Company, Melbourne, were awarded the second prize.

It is reported that the fruit was of very good quality and in perfect condition.

Congratulations are tendered to Mr. Savory for his enterprise.

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New South Wales.

THE PRUNE INDUSTRY.

Dangers of Over-production.

Price-cutting Deplored.

Voluntary Organisation Advocated in New South Wales.

THAT THE PRUNE INDUSTRY in Australia is facing a very serious situation is set forth in an article by Mr. G. H. Glasson, Manager, Young and District Producers' Co-operative Association.

Mr. Glasson appeals for a comprehensive sales promotion programme, the abandonment of the foolish price-cutting policy, and the voluntary organising of the Prune growers of New South Wales.

Here are some other points brought forward by Mr. Glasson:—The increase in production in the Young district this season is approximately 50 per cent. over that of the previous season, and as the carry-over from last year's crop, taking into account all districts in New South Wales, was not less than 400 tons, some form of sales promotion was essential.

So far the only impetus to increased consumption has come from the ruinous competition amongst growers not affiliated with either of the two main co-operative organisations operating in N.S.W. . . . . : but for the existence of these organisations this season's crop could never be marketed at all.

Under the State Marketing Act it would be possible to introduce compulsion: the better way, however, was for N.S.W. Prune growers to voluntarily unite as an alternative to the creation of a State Marketing Board.

Prune growers in N.S.W. must set out to capture the whole Australian market. Prune consumption is greater in N.S.W. than in other States; and in these other States is the potential market for N.S.W. Prunes. Because of the varieties grown in the other States consumption had been retarded. The high quality N.S.W. Prunes had already stimulated consumption.

Export could only be carried on at a loss: every grower should do his share so as to secure better local market prices.

LEETON FRUITGROWERS' FEDERATION.

AT the recent annual meeting of the Leeton Fruitgrowers' Federation the Secretary, Mr. C. R. Glover, stated that the average price for red-centre Peaches for the past season was £6/9/3 per ton. A limited tonnage of slightly damaged fruit was also accepted for pulping at £5 a ton.

Deliveries of Peaches were very much below original estimates, totalling only 2,200 tons. It was reported that deliveries to the Sydney canneries from Griffith and Yenda amounted to 3,500 tons at £9 a ton. The co-operative companies were to be commended on their foresight in entering into these contracts.

Deliveries of Apricots to the Leeton cannery amounted to 300 tons. The demand for canned Apricots was not great, and growers were urged to seek more payable outlets.

There was an urgent need for the development of new and improved varieties of clingstone Peaches to supplement the very limited number of satisfactory types now available.

Some new varieties of merit had been produced in California, and Australia must be in a position to meet the competition.

An advance announcement had been made stating that the cannery would not accept either green Peas or Tomatoes in the coming season. This would entail hardship on growers.

It was regretted that wholesome fruit was sacrificed, while a substantial demand existed for sliced Peaches, small Peaches of good quality in small cans, crushed Peaches for tarts (similar to crushed Pineapple), also pulp. It should be possible to develop trade with Eastern Asia in small cans of Peaches.

Curlwaa.

At a recent meeting of the Curlwaa Fruitgrowers' Association the necessity for strengthening the V.C.C.A. was emphasised. It was stated that unless growers voluntarily adhered to the principles of the V.C.C.A., legislation would be necessary similar to the dried fruits control.

The annual meeting of the Curlwaa Fruitgrowers' Association was held in mid-July. The following office-bearers were elected:—President, Mr. L. McLeod; Vice-Presidents, Messrs. L. B. O'Donnell, R. S. Thornton, H. Scott, and E. Wilkinson; Secretary, Mr. E. L. Watmuff; Auditors, Messrs. E. Wilkinson and R. S. Thornton; Shed Representatives, Messrs. G. Lush, J. McGeorge, and W. Brine; Advisory Board, Messrs. L. McLeod, W. Brine, Alf. Smith; Hall and Grounds Committee, Messrs. R. McKenzie, G. Dowley, G. Lush, H. Midgley, L. Ewald, W. Brine, L. B. O'Donnell; Caretaker, Mr. M. Rice.

PERSONAL.

Mr. J. M. Balfour, Chairman of the Publicity Committee of the Australian Dried Vine Fruits Industry, recently put in some good work in Sydney, and convinced bakers and pastrycooks as to the benefits which would accrue from an intensive Raisin bread and Raisin pie campaign.

NEWS AND NOTES

The production of dried vine fruits in Australia in the 1931 season, totalled 51,104 tons. The production in the 1930 season was 72,532 tons, of which 46,346 tons were exported.

England is now consuming 83 lbs. of fruit per head as compared with 70 lbs. per head in 1924. This speaks well for the "Eat More Fruit" campaign.

Of all the fruits imported into Great Britain, Oranges head the list.

Consign your Fruit to—

J. JAEGER

Telegrams: Jaegagento, London.

FRUIT IMPORTER

18 Bedford Chambers, Covent Garden
London, W.C.2.,

and compare the results with those of the competition.

Try and See.

AGENTS REQUIRED.

Dried Fruits Industry.

Exports and Local Trade—Raisin Bread and Raisin Pie Campaigns Successful.

N.S.W. Bakers Will Assist in Publicity.

Mr. J. M. Balfour, Chairman of the Publicity Committee of the Australian Dried Vine Fruits Industry, addressed a meeting of the Executive of the New South Wales Master Bakers' Association in Sydney recently. Mr. Burton, President, occupied the chair. There were also present: Messrs. J. McCall, J. Grant, F. Reed, H. Granger, R. Law, S. Hunter, —. Hamilton, H. Gough, J. Israel (Secretary).

Mr. Balfour stated he desired to further interest the bakers and pastry cooks of New South Wales in the Australian Dried Fruits industry. He stated:

The Australian production of dried vine fruits for seasons 1930/31 respectively, is as follows:—

	Currants. Tons.	Sultanas. Tons.	Lexias. Tons.	Total. Tons.
Season 1931 (estimated) ..	18,336	27,035	5,733	51,104
Season 1930.. ..	18,850	47,703	5,979	72,532

The exports overseas of the 1930 season's pack were as follows:—

Currants. Tons.	Sultanas. Tons.	Lexias. Tons.	Total. Tons.
13,102	30,686	2,558	46,346

The heavy reduction in export values for 1930 season as compared with the average price per ton of 1925 season affected the Australian grower of Sultanas to the extent of at least £900,000 in the United Kingdom alone.

The net realisations of a large portion of Australian dried fruits are well below the cost of production. Similar difficulties have been experienced in other dried vine fruits countries.

Under existing conditions, production costs in Australia cannot be materially lowered without reducing the quality of our fruit below market standards. Notwithstanding the fact that our Sultanas are the finest in the world, without the preference granted to us we would be unable to maintain our Raisin sales in the United Kingdom and Canada in competition with those of other countries. It is estimated that the world's production of Raisins exceeds the consumption by 29,000 tons. To relieve this adverse position, a limitation of the marketable crop has been suggested. In California, the Control Board left on the vines 350,000 tons of Grapes, the equivalent of 100,000 tons of Raisins. It must be remembered, however, that the national interests of Australia would not allow her to follow this example. America is not a debtor nation, and is not compelled to export her primary products.

On the other hand, as a debtor nation, Australia is required to increase her exports in order to balance her overseas trade. As a result of the reduced export values of her primary products, Australia must increase her exports to make good the deficiency. The preference granted Australia by the Mother Country and Canada have been wonderful aids to the Australian dried fruits industry.

Since 1925, our sales per annum in the United Kingdom have increased from 22,500 to nearly 50,000 tons, and, in Canada, from 167 tons to over 7,000 tons.

Since the establishment of legislative control in Australia, in 1925, continued Mr. Balfour, great improvements in the industry have been effected. Production has increased from 37,200 tons in 1925 to more than 70,000 in 1930. Better and more uniform methods are now observed by the grower, and there has been a marked increase in the efficiency and extent of the services rendered by the packers and distributors. The packing sheds are well lighted and ventilated, and have concrete floors. Powerful exhausts remove dust and debris and washing facilities for thoroughly cleansing the building and machinery ensure favorable hygienic conditions.

Just Before the Buds Burst--

a critical time for the Orchardist when fighting insect pests.

Write for The Shell Company's Booklet, "Profitable Fruit Spraying," which gives the correct times and strengths for applying the most effective sprays obtainable —

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Evidence continues to pour in

1. From all parts of the world
2. From all Australian Fruit Areas
3. From Leading Growers
4. From Agricultural Departments

That while Nitrogen is the chief plant food for Citrus, it is also very necessary for all other fruit trees

And that the Cheapest Form of quickly-effective, yet long-lasting Nitrogen is in

SULPHATE of AMMONIA

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Fertilisers Ltd.
133 St. George's Terrace, Perth, W.A.

In order to stimulate the sales of dried fruits within the Commonwealth, the industry desires the co-operation of the Master Bakers' and Pastrycooks' Associations. During the last few months in Adelaide and Melbourne, an energetic campaign has been carried out. In Melbourne and suburbs alone, this year, through the Master Bakers, over 130,000 Raisin bread leaflets have been distributed. The traders now look upon the Raisin bread as an important adjunct in their business.

The Chairman of the Victorian Railways Commissioners, has contributed largely towards the success which has been achieved in the Raisin bread and raisin pie campaign. Railway services sales run into many thousands of loaves per month. Melbourne bakers report increases as high as 100 per cent. in their sales during the last few weeks. As the campaign has already been operating in the large provincial centres of Victoria, it is now desired to extend to New South Wales.

It is felt that, in studying the interests of the industry, bakers and pastrycooks will also be studying their own interests. People are becoming more and more educated to the necessity of giving consideration to food values. They recognise that Raisins are rich in nutritive elements, and, instead of being considered as a luxury, are now recognised as a household staple.

Currants, Sultanas and Raisins have a distinct appeal as a health food, and, owing to their keeping qualities, are dependable, and ever ready for emergency dessert. No matter through what processes of cooking it may be put, the Raisin retains its vitalising, health-giving iron, easily dissimilated in the digestive processes, and, while some eat them for iron, the modern housewife uses them because they are delicious and appreciated by the family.

In reply to questions from the President and members of the Executive, Mr. Balfour stated that the sales of Raisin bread in Melbourne and suburbs were not only being maintained but were being increased weekly; 27 of the leading Melbourne bakers stated that their Raisin bread sales had increased from 15 per cent. to 100 per cent. Inquiries were being received from varions States of Australia and New Zealand. After a discussion, the President announced on behalf of the Association that the New South Wales Master Bakers were prepared to give all the assistance in their power to further the interests of the dried fruits industry, and particularly in regard to a Raisin loaf and Raisin pie campaign.

AUSTRALIAN DRIED FRUITS.

Overseas Sales.

Mr. W. C. F. Thomas, Chairman of the Commonwealth Dried Fruits Export Control Board, has received advice from the London Agency of the Board that during the week ending July 16, 1,272 tons of Australian dried fruits were sold in British markets, the value being £54,625.

Three hundred and fifty-five tons of old season's Sultanas were placed at an average of £40 per ton, and 261 tons of new season's Sultanas at £54/16/8 per ton.

The demand for Currants was stronger, 642 tons being sold at an average of £39/15/-.

The total shipments to Great Britain to date for the current season comprise 22,754 tons, of which 5,639 tons have been sold. The balance of 17,115 tons landed in British ports or afloat, together with the carry-over of 3,163 tons of 1930, Sultanas will probably meet with a sustained demand owing to the uncertainty as to the forthcoming Mediterranean harvest.

The market is reported to be firm with a steady offtake of all grades.

The announcement of increased protection afforded by the Canadian Australian Reciprocal Treaty assures a continuance of the rapidly developing interest in Australian dried fruits in Canada, and substantial shipments will be made to that market during the next six weeks.

A.D.F.A. BALLOT.

At the annual Australian Dried Fruits Association ballot held at Red Cliffs, all of the members of the retiring Committee (with the exception of Mr. H. J. Aldred) who sought re-election, were elected for a further term. Details of the voting are as follow:—J. Stewart (216), H. V. Davey (202), C. H. Cameron (201), A. Mackinnon (194), C. H. Gould (194), C. Metcalfe (179), H. Youngs (178), A. Edwards (175), J. Gordon (168), F. Gallagher (156), H. J. Aldred (148), D. M. McDonald (134), I. Knott (131), and J. Olsson (124).

Three vacancies were caused by the resignation of Mr. D. Farmer, and Messrs. A. Cameron and T. McKellar did not seek election.

MERBEIN GROWERS' UNION.

At the recent annual meeting of the Merbein Dried Fruits Growers' Union, Mr. J. Hyndman presiding, a report was received from Mr. W. H. Tickell on behalf of a sub-committee dealing critically with the finances of the Water Commission. The total cost now loaded upon the land was £34 per acre. The attitude of the Commission appeared to be that there would be no reduction in rates, despite falling costs, until the settlement had wiped out its arrears. The sub-committee was thanked for its report and asked to continue its investigations.

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FROM LOWEST CURRENT RATES.
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Tobacco Culture.

SOME INTERESTING COMMENTS on the subject of tobacco culture have been extracted from the comprehensive report prepared for the Victorian Government by Dr. S. S. Cameron, who was then Director of Agriculture. The report was published in the "Journal of Agriculture," Victoria. After visiting Virginia and South Carolina, Dr. Cameron writes:—

Soils, Climate, and Culture for Tobacco.

An outstanding deduction to be drawn from the information received from all sources is that the varying characters and qualitites to tobacco leaf by which it is classified into "types" is definitely related to the character of the soil on which it is grown, and to the climatic conditions governing its growth. Thus it is accepted that similarly constituted and fertilised soils will produce different types of tobacco capable of developing on curing varying quality, according as the climatic conditions differ. Conversely, like climatic conditions will not necessarily overcome varying quality according as the soils vary. These dicta have been arrived at by observation and experience over a long period of years, and have been verified by experiment. A study of maps showing the types of tobacco grown in the same locations in successive decades over the last 70 years reveals the many changes of location for certain types that have been forced by economic conditions. "Proof by trial" has been the process by which the present knowledge on the matter has been reached, and, except as regards a few of the factors determining the suitability of certain soil types for the production of certain tobacco types, it would seem that proof by trial will still have to be adopted in all new areas where tobacco growing is contemplated in Australia. In other words, it does not appear that any definite key to the character of soils and climate that can be relied up to produce a required type of leaf is available by chemical, physical, or other tests.

In this connection the recent work of Dr. Garner has, however, demonstrated the essentiality in the soils of the presence of magnesium as well as the ordinary chemical plant foods such as compounds of phosphorus, nitrogen, calcium, potassium, etc. He indicated to me the probability that the presence of the more rare minerals, such as boron, manganese, iron, and fluorine would probably be found to have a determining influence on the kind of growth contributing to the determination of "types."

Essential Soil Factors.

Other factors that, in Dr. Garner's opinion, seem to be definite in this regard are:—

That leaf texture is related to soil texture; e.g., thin leaf on sandy soils and thick leaf on heavy loams.

That sunshine and dryness of the atmosphere and soil are correlated with leaf composition that will develop aroma on curing and post-curing treatment.

That the amount of nitrogen of the soil is reflected in the protein of the leaf (and its cleavage products) which may have to do with the development of aroma.

That soil color is also reflected in the color of the leaf, to wit, the Burley color when grown on red soils and bright color on light colored sandy soils.

That flue cure types of leaf are only satisfactory when grown on soils with low nitrogen content, and which are sandy and "dry," i.e., low moisture-holding capacity, they also need a liberal potassic supply for physiological perfection of growth and adequate phosphorous available to promote satisfactory ripening.

That the reverse, high moisture-holding capacity ("wet" soil), is necessary for the "air cure" types such as Burley and dark mahogany.

That the potentiality for quality and high nitrogen content are in inverse ratio.

TOBACCO CURING BY ELECTRICITY.

We have received from the State Electricity Commission of Victoria a brochure entitled, "Tobacco Curing by Electricity."

The report gives an outline of the process and deals in detail with curing, drying the cured leaf, heat requirements, etc. Proved advantages of the electrical method are:—(1) The fire risk is reduced to the minimum. (2) There is no possible chance of taint from flue gases. (3) The aroma of the dried leaf is noticeably stronger. Almost every visitor to the kiln remarked on this quality. (4) The drying can be speeded up without the use of excessive temperatures. Thus smaller plant is required for a given crop. (5) The minimum of attention is needed. A two-minute inspection and adjustment of controls twice per day is ample. (6) Loss of quality due to "sponging back" can be entirely eliminated. (7) The color is brighter. (8) The grade is more uniform.

Next season, with the co-operation of the growers, it is proposed to concentrate on the economic aspect. Leaf of uniform variety and ripeness will be divided between the electric and an ordinary kiln. The cured product will be stored separately, and the eventual grading will determine what extra profit may be expected from the improved method of treatment.

Something New
for the
TOBACCO
PLANTER

The Planting Season is at hand
SO GET READY
and get particulars of the
New Tobacco Planter
with improvements never before
embodied in any machine

This Machine is a combination of ideas built up from the practical experience of Australian Growers

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BOX HILL - Victoria - Australia

Victoria.

SOUTHERN VICTORIA FRUITGROWERS' ASSOCIATION.

The annual meeting of the Southern Victoria Fruitgrowers' Association was held at Box Hill on July 9. Mr. L. Pepperell, presiding over a large attendance, In opening the Conference, Lt.-Col. Knox, M.L.A., strongly criticised the Sugar Agreement: it was an irksome and stupid piece of legislation, imposing an unfair handicap on the housewife.

Hon. W. Angliss, M.L.C., congratulated the Association on its spirit of self-reliance, and its desire not to rely on Government assistance.

In his annual report the President said that strong representations were made against the renewal of the sugar embargo. This Association and most others in Australia, had nominated Mr. R. E. Boardman to represent growers on the Sugar Enquiry Committee. Other influences prevailed, however, and Mr. W. Young, of Ardmona, had been appointed: the Association had protested, not against the Government nominee, but against the manner of the appointment. Regarding the proposed Marketing Bill, the Association had acted vigorously to secure its defeat, and was successful. Future action, however, needed watching. The Association's request for an embargo on the importation of Lemons was justified. Kerb markets were being continued.

On the motion of Mr. W. A. Thiele (Doncaster), seconded by Mr. R. M. Finlay (Diamond Creek), it was decided to nominate Mr. W. J. Foster (Merrigum), as the Association's representative on the Sugar Concession Committee.

Marketing Bill Again Opposed.

It was unanimously decided that—"In the event of the Government taking action to control primary produce or marketing of fruit, this Association pledges itself strongly to oppose any such action."

Other resolutions were carried: (1) Requesting a general reduction in the tariff; and (2) continuity of scientific research, particularly in regard to refrigerated transport.

AUSTRALIAN APPLE AND PEAR EXPORT COUNCIL.

Important Conference to be Held at Melbourne, August 19 and 20.

THE AUSTRALIAN APPLE AND PEAR Export Council, is to hold a Conference at Melbourne on August 19 and 20. Meetings will be held in the Board Room at the Commercial Travellers' Association, Flinders-street.

Delegates will be in attendance from every Australian State. The delegates so far appointed are N.S.W., Messrs. H. V. Smith and H. Broadfoot; South Australia, H. J. Bishop and J. B. Randell; Tasmania, Mr. B. J. Pearsall and Hon. W. H. Calvert, M.L.C.; Queensland, Mr. C. G. Parnell.

The following is the agenda paper to date (incomplete):—(1) Fruit export grading regulations; (2) The fruit case question; (3) Forecasting crops; (4) Co-ordination of States in distribution of shipments; (5) Freight on export fruit; (6) Australian representative for England, as per letter from Markets Department, and invitation from Empire Marketing Board; (7) Formation of Overseas Committee; (8) Pear export; (9) Stowage of fruit for export; (10) Uniform inspection; (11) Trade with the East; (12) Duty on Australian fruit entering Germany; (13) Hail insurance; (14) Temperatures in ships' holds; (15) Co-ordination to insure spaced arrivals at destination; (16) Nomenclature of fruit to be uniform throughout the States; (17) Tariff—general reduction desired; (18) Continuation of scientific research through the Council for Scientific and Industrial Research; (19) Advertising Australian fruit in Great Britain.

Research Work .

A session will be devoted to research work and cultural matters. Dr. A. C. D. Rivett (Council for Scientific and Industrial Research), will be in attendance, and will deliver an address.

Invitation to Growers.

All growers are invited to attend this Conference. Victorian growers in particular are urged to keep these dates free and to attend what will undoubtedly be the most important conference so far held in connection with the Australian fruit export industry.

Full particulars are obtainable from the Acting Secretary, Mr. R. E. Boardman, c/o "The Fruit World," Box 1944, G.P.O., Melbourne.

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Consignment shipments solicited on behalf of leading Fruit Brokers and Salesmen throughout England and Continent.

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Established 1882
A Trial Consignment solicited from Growers in all States.
Prompt Settlement.
26 New Wholesale Fruit Market, Melbourne

New Citrus Processing Plant.

AN AUSTRALIAN ENTERPRISE.

THE Mayor of the City of Box Hill (Cr. Mahony), accompanied by the Town Clerk, City Engineer and several of the leading citizens and business men, recently paid a visit to the "Harvey" Implement Works at Box Hill, Vic., and were cordially welcomed and shown over the premises by Mr. D. Harvey. The Mayor expressed astonishment at the quantity and excellence of the work being turned out. All classes of implements for the fruitgrower are being manufactured by this enterprising establishment. Ploughs, cultivators, harrows, rakes, scuffers, horse and tractor drawn implements, dehydrators. fruit graders, etc.

The most striking machine inspected was a very large citrus fruit processing plant, which is one of the largest in Australia. This was being manufactured for the Renmark Fruitgrowers' Co-operated Ltd., Renmark, South Australia. The finished portion was given its preliminary run.

In the fruitgrowing industry, and particularly fruits picked for export, a good deal of damage is done before the fruit reaches the packing shed, and it is not possible to build up a pack that will carry well when the fruit has been roughly handled in the picking; in addition, a certain amount of immature fruit has been packed for export.

With the idea of obviating this, the Citrus Packing Company is determined to see that the fruit is mature, ripe and ready for picking before the actual operations commence.

The general contention is that an inspector should inspect the fruit before it is picked and then professional pickers engaged constantly by the company, equipped with gloves and secateurs should commence picking. The supplying of gloves will avoid the finger-nails coming in contact with the fruit and injuring the skin; the secateurs will mean that every fruit will be cut instead of pulled off the tree.

Proper picking bags will also be supplied to eliminate injury. The fruit will then be transferred from the bag into padded lug or sweat boxes, which in turn will be carried on specially sprung lorries to the packing shed.

The pickers will be fully engaged going from orchard to orchard under the direction of a supervisor. This will enable a constant stream of fruit going into the shed and the packers will receive sufficient fruit to handle each day; this will reduce the trouble that so many packing houses have of getting a rush of fruit one day and a dearth on other days. In many cases when a rush comes in it causes congestion, double handling and loss of efficiency, while at other times the hands are temporarily idle; therefore the constant stream of fruit coming in daily must add to efficiency.

The Renmark Fruitgrowers' Co-operated Ltd. have gone into this matter very carefully, and decided to instal a large and efficient plant to deal with the fruit as it is brought in. The whole process will be done almost without the aid of the human hand; the only exceptions will be at the sorting table, where the fruit is sorted into qualities, and where the packers pack the fruit into cases. After the fruit arrives at the shed the procedure will be that all fruit will be placed in a soaking tank to remove all dirt; as it moves forward it is elevated on to a wet scrubber with revolving brushes, which thoroughly scrub the citrus fruit under a spray, and when cleaned it then passes on to a sterilising tank, where the fruit is completely immersed in the chemically treated water. After being immersed for a given time it passes on to a towel

SAVE BY SPENDING

The Cost of Gerrard Strapping is Small

The Savings are Great

Gerrard Wire Strapping Machines for Fruitgrowers

RENTAL AND SERVICE CHARGE—
For the first year 20/-
For the second and ensuing years 10/-

WIRE-SEAL STRAPPING FOR FRUIT CASES—
1 to 24 bdles. 25 bdles.
For standard cases, 4 ft. 6 in. .. .. 10/- .. 9/6
For dump bushel cases, 4 ft. 9 in. .. 10/6 .. 10/-
Prices per bundle of 250 straps, delivered f.o.b. Melbourne.

Gerrard Distributors carry stocks in all chief fruit centres, adding freight.

Gerrard Wire Tying Machines Co. Pty. Ltd.

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absorber, which takes the excess moisture from the fruit before it enters the drier.

The fruit moves slowly through this drier and is subject to large volumes of air from a series of fans. After the fruit is absolutely dry it passes under an atomiser, which sprays a very thin film of paraffin wax on the Oranges. (This wax protects the fruit from attacks of fungus diseases during exportation.) The paraffin wax having been sprayed on the fruit, it passes on to the dry polishing brushes, which give the finishing touches and appearance to the fruit. The next stage is that the fruit continues along over an automatic sorting table, where the staff sorts the fruit into different qualities and the culls are removed. From this table the fruit passes on to the sizer, each quality fruit being graded into fifteen different sizes. The first seven sizes of the smaller fruit being graded to 1-16th of an inch, while the larger fruits are graded into 1-8th of an inch. The fruit having been sized is then conveyed into large spring floor bins, which will accommodate thirty packers.

This grader can be adjusted to make all sizes grade 1-16th or 1-8th or 3-16ths of an inch if necessary, and is built so as to alter to any size, should any alteration of sizes be called for in the future.

Cull belts have also been provided over the packing bins, so that any fruit missed at the sorting table may be returned to the cull bins. A feature of this plant is that the larger fruit, which is generally the most delicate, travels the shortest distance to the bins.

Sliding packing benches are provided, so that they will accommodate either a right or left hand packer, the wrapper paper trays being placed in a convenient position.

When the packer has finished packing he places his case on a runaway, which carries it to the nailing press.

Citrus Growers
and
Packing Companies

THE
GRADER
Built to Suit
Your Requirements
is the
"HARVEY" FRUIT GRADER

You can adjust the size of each grade separately without interfering with the grades on either side

Full particulars from :—
D. HARVEY
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Will Grade from 1/16th in. Upwards.

Agents All States.

It is understood that the Renmark Fruitgrowers' Co-operated Ltd. is contemplating branding each fruit with an electric brand.

RED CLIFFS V.C.C.A.

At the annual meeting of the Red Cliffs Branch of the Victorian Central Citrus Association, the following office-bearers were elected:—President, Mr. A. E. Cameron; Vice-President, Mr. C. H. Gould; Secretary, Mr. C. H. Cameron; Committee, Messrs. G. Hughes, G. Gilley and H. E. Stevens.

Important Discovery in Citrus Industry.

Parasitic Control of Black Orange Aphis in W.A.

Mr. L. J. Newman, Economic Entomologist (W.A.), has reported that they have rediscovered the presence of the woolly aphis parasite (aphelinus mali) in the black Orange aphis and also attacking an undescribed species of aphis on a garden plant (aeclepias fruticosa).

This may prove of as much value in the control of the black Orange aphis as aphelinus mali is in controlling the woolly aphis.

This discovery will be followed up with the object of establishing this strain in the various citrus areas.

The black citrus aphis is often a very serious pest, and, when bad, is responsible for the poor setting of fruit and damage to the young spring and early summer growth.

To substantiate the claim that they had found this parasite, specimens bred from both species of aphides were mounted and forwarded to Mr. E. S. Gourlay, Entomologist, Cawthron Institute, New Zealand, who reports as follows:—

"I have examined the aphelinid which you reared from Orange aphis, and find it aphelinus mali, as you suspected."

PERSONAL.

Mr. J. W. Barker (Barker, Green & Parke), who is at present visiting England and the Continent, has sent a cable conveying kind greetings to any enquiring friends.

The control of rust in Peaches is dealt with in this issue. Spraying with Bordeaux is recommended.

The grand total of deciduous fruit export from Australia this season was 3,569,705 bushels.

Rockhampton

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offer a prompt and reliable selling service. Best Prices. Prompt advices and returns.

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P.O. Box, 223. Brand: ORCHARD RTON.

Western Australia.

Mr. G. W. Wickens, Superintendent of Horticulture, writing in the "Journal of Agriculture" (W.A.) of June, 1931, states that the total quantity of Apples shipped from January 1 to May 15 amounted to 442,068 cases, and there were a few thousands still to go. The total shipments of all kinds of fruit for the period mentioned comprised 505,178 cases. Of this total, only 32,617 cases were shipped from Albany, owing to infestation of thrips.

The Pear and stone fruit crops were lighter in all districts than the average in recent years, the Pears exported only amounting to 16,182 cases.

Grapes.—For the 1931 season, 46,444 cases of Grapes have been exported, with a few more ex cold store still to be shipped.

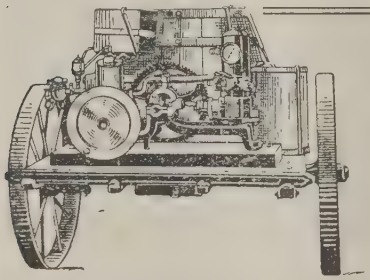
The Currant crop will be the largest produced in the State up to the present. 1,525 tons have been packed up to May 16, 1931, with more on hand now being processed.

The export of this season's dried vine fruits up to May 16 comprised 1,154 tons of Currants and 82 tons of Lexias.

Citrus.—Mr. Wickens estimates this season's Orange crop at 210,000 cases; Mandarins 13,000 cases, and the Lemon crop at 58,000 cases.

Apple and Pear growers will be pleased to know that the whole season has passed without any appearance of codlin moth either in fresh orchards or orchards previously infected, and another piece of cheering news is the good results obtained in the work done towards eradication of Apple scab (Venturia inequalis). In Mr. Brealey's orchard at Manjimup no trace of the disease has been seen during the whole season, and he certainly deserves success, for the work he did was exceedingly thorough.

In the Porongorups orchard, where Apple scab was found last year, only one Apple was found affected this year, and that was early in the season, so that next year's operations should free this orchard from the disease.



Bave-U
Power
Sprayer

Write for Particulars
. . of our . .

New Model "Bave-U"

Manufactured to give the Grower
the benefit of the Low Price Offering

Full Information from—

RUSSELL & CO.
ENGINEERS
BOX HILL————Victoria

N.S.W. Agents—F. H. G. ROGERS, Fruit Exchange, Sydney

BAVE-U POWER SPRAYER.

A New Model at a Reduced Price.

Mr. Russell, of Messrs. Russell & Co., of Box Hill (Vic.), manufacturers of the well-known Bave-U motor spray pumps, realising it was necessary to fall in line with the times, has completed the manufacture of another model of the Bave-U at a reduced price.

This model is another of Mr. Russell's sturdy pumps of solid construction. His idea was to manufacture a machine capable of standing up to long life and hard work and to give the grower the advantage of the reduced price.

The machine is of the standard type of Bave-U made on approved lines. The engine of the sprayer is four horse power and water cooled. The crank shaft is cut from a solid block of steel. The bearings are made from phosphor bronze, and are exceptionally long. The pump is of the plunger type, and can be renewed at small expense. There is absolutely no wear on the pump body itself, and all models will be supplied on either 2 or 4 wheeled transports. Mr. Russell's long experience enables him to know the exact requirements of growers, and with the Bave-U he certainly has given growers a machine capable of standing up to years of wear and service.

Some growers have had the same pump continuously in operation for over 20 years. The satisfaction of these machines is shown in repeat orders received by this firm. To mention a few, the Toomuc Valley Orchards Pty. Ltd., of Pakenham (Vic.), had no less than 13 machines. Young Bros., Ardmona, 8 machines. Others to have repeat orders include T. E. Jones, Narre Warren; G. A. Syme, Killara; T. H. Petty, Doncaster; E. Stocks, Drouin, and many others.

Inside Information.

Jones: "What are you burying?"
Smith: "My pet canary."
Jones: "No, you're not—you're burying my pet cat."
Smith: "The canary's in the cat."

GOODMAN'S

FRUIT TREES

End of
Season
Orders!

Fruit Growers! Order immediately! Goodman's stocks include ALL the best selling varieties—Strong, healthy, and well-grown trees, true to label, free from insect pests, prolific bearers of finest marketable fruit!

End of season orders promptly despatched anywhere in Australia.

Catalogue, price list, etc., free.

C. J. GOODMAN
Picnic Point Nurseries, P.O., Box 47 - BAIRNSDALE, VIC.
(W-McF.)

4

● good fruit

● good grading

● good packing

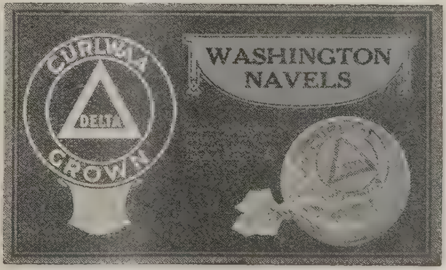
Good Points

and

● A GOOD LABEL

WHITE SEAL
TASMANIAN APPLES
STANDARD GRADE
AUSTRALIA

will do the same for you



"The Labels are just the thing and have improved the sale of Grapes considerably.

"The Labelled Cases forwarded to the markets realised 1/- per case higher than those sent without Labels. I am sure that the same results will follow with the Orange Labels, etc."

Yours faithfully, (Signed)

"I am finding that my fruit, packed under the Label, is bringing top prices on all markets. I am now more than ever convinced that if one has good fruit it is essential to put it up in an attractive manner."

Yours faithfully,
(Signed)

Labels for 1d. Sell for 1/-!

When the best Labels are a very profitable investment and not an expense, why not use the best Labels?

Get a new design if your present brand of Label is not getting the right results. Write now to—

MASON, FIRTH & McCUTCHEON Pty. Ltd.

Leading Label Designers and Colour Printers

505-9 LITTLE COLLINS STREET,——MELBOURNE, C.1.
Established 1853

Whose designs and quality are getting results

Tomato Culture.

The growing of Tomatoes under glass is now an industry of quite considerable proportions.

Mr. Geoffrey Samuel, M.Sc., of the Waite Agricultural Research Institute, Adelaide, recently prepared some useful hints on this subject, which were published in the journal of the South Australian Department of Agriculture.

Mr. Samuel points out that there are growers who raise anything from 4,000 to 40,000 or more plants every year under glass. Healthy plants are absolutely necessary.

When planting time approaches a very heavy flooding is given to the soil, a heavy dressing of bonedust (about a bag per 100 ft. of 15 ft. house), and a layer of from 2 in. to 4 in. of well-rotted stable manure applied, and the whole house dug as deeply as possible.

Provided it is applied some two months before the house is planted, fresh or quick lime can be used and may have some beneficial sterilising effect.

Planting Out.

The two important points in planting out are: (1) to give the seedlings as little direct handling as possible, and (2) to supply them with the best conditions for commencing active growth immediately.

With regard to (1) the tray method is almost ideal, for the boxes of 60 seedlings can be taken and set along the house, and the seedlings are not disturbed until actually planted. When planting, each seedling can be removed from the box with a sharp trowel with a square of soil surrounding its roots; it is lifted by this square of soil, and the actual seedling need never be touched. Once again, it is better to plant slightly on the deep side.

Practically the same methods can be used where the seedlings are grown in the soil of the seed frames, but the transportation after they have been cut out, often tends to shake soil from their roots, and they do not get quite such a good start as seedlings which are planted with a lump of the original seed bed soil still undisturbed round the roots.

With regard to (2) supplying them with the best conditions for commencing active growth immediately—good previous preparation of the soil and the presence of a little superphosphate are the main requisites. As a "base" dressing bonedust and manure should be worked into the soil, to form slowly available reserves on which the plants can draw continuously; but this basal dressing is not sufficient for the best growth, and a little superphosphate should be added when each seedling is planted; it helps the plants to establish themselves as quickly as possible. The plants can also be helped by the choice of a cool, cloudy day for transplanting, and by keeping up the watering fairly close behind the planters.

* * * * *

For average outside plantings, the following hints are tendered by Mr. Hutchinson.

Rotation of Planting.

(1) South Australian Red, Burwood Wonder, Burbank Velocity and Wilding's Prolific.

WANTED TO BUY

HARVEY—2 F. Disc. Plough, or would Exchange 3 F. Harvey Mouldboard. - - Box 9, Horsham.

Tomato Plants

IMPROVED LARGE RED, EARLIANA, BURBANK, IMPROVED BURWOOD WONDER, ORANGE PROLIFIC.

Grown from specially selected seed in cases containing 200 plants, 25/- per 1,000, packed on rail.

Cruickshank Bros.
Wholesale Nurserymen,
Wheatley Road - Bentleigh - S.E.14
Stand—Victoria Market, 36 E Shed

Tomato Plants
Well Hardened in New Cases of 200

LEADING VARIETIES.
Hutchinson's Special L. Red.
Burbank Improved.
Aust. Large Red. Burwood Wonder.
Velocity. Wilding's Prolific.
South Aust. Dwarf.
FOR LATE PLANTING—
Orange Prolific. Lysterfield.

PRICE ON APPLICATION.

HOWARD HUTCHINSON
Wholesale Nurseryman
"Fernshaw" Bambra Road Caulfield, S.E 8

Tomato Plants

Strong Plants Raised and Grown in Sterilised Soil, thus taking every precaution against disease
Plant now the following varieties:

LARGE RED, SOUTH AUSTRALIAN DWARF, ORANGE PROLIFIC, BURBANK
and other varieties.

Grown from Selected Seed of our own saving.

Packed and sent anywhere. Prices for large or small quantities on application to:

Wm. Bone & Sons
880 Glenhuntly Rd., Carnegie, S.E.9., Victoria

(2) Australian Large Red, Chalk's Early Jewell and Earliana.

From September on—Listerfield, Orange Prolific, Allwood.

The early varieties may be planted from July to Christmas.

Soil.—A good moist, well-drained sandy loam suits all kinds of Tomatoes, but any good soil will grow them.

Manures.—Fresh stable manure is not recommended; only well decayed manure should be used, and that some time before planting. Liberal applications of chemical fertilisers are most beneficial, mixed in with the soil when planting as follows:—

Superphosphates, 1½ oz. per sq. yard, or 4 cwt. per acre.

Bonedust (or blood and bone), 1 oz. per sq. yard, or 2 cwt. per acre.

Sulphate of potash, ¾ oz. per sq. yard, or 1½ cwt. per acre.

Sulphate of ammonia (or nitrate of soda), 1 oz. per sq. yard or 2 cwt. per acre. The last mentioned should be applied only in small quantities at a time, either dissolved in water at intervals of two to three weeks; or half the amount given a little while before flowering commences, and the other half when the first fruit has set.

* * * * *

Should pea mite be troublesome, use one part lime and one part Pestend. Sprinkle round the plants immediately on planting.

WEST DONCASTER.

There was a good attendance at the half-yearly meeting of the shareholders of the West Doncaster Cool Stores on July 11. Mr. J. Tully presided.

The directors reported on the installation of motor power during the past six months, and expressed satisfaction at the running of this new power. The financial position was shown to be very good.

A recent report from London favors the ¾ bushel case for Pears.

Growers at Leeton, Murrumbidgee irrigation areas, N.S.W., received an average of £6/9/3 per ton for red centre Peaches last season.

FRUIT TREES

ONE GROWER SAYS—

"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

KLEENUP

A New White Dormant
OIL SPRAY

KLEENUP controls Red Spider, Mussel Scale, San Jose Scale and other scale insects on Apple and Pear trees by a winter application.

To increase the effectiveness of Bordeaux Mixture or Lime Sulphur in controlling Black Spot, combine 1 per cent. KLEENUP with the ordinary winter application up to the pink stage.

Peach, Cherry and Apricot pests are more easily and effectively controlled by the addition of KLEENUP.

Read Mr. W. G. Parker's opinion of KLEENUP —16/7/31:—

"We sprayed with Lime Sulphur 1 gallon in 9, Kleenup as directed, on William's Bon Chretien, Josephine, Packham and Buerre Bosc Pears when buds were swelling. As Lime Sulphur is very severe at this strength, I think when mixing Bordeaux with Kleenup, I would spray when buds are bursting. We have just finished pruning the Pears and find no trace of scale or red spider. I also sprayed Peaches with Kleenup and Lime Sulphur, they were absolutely clean of Aphis. The Peach trees I sprayed with Lime Sulphur and **without Kleenup** were absolutely covered with Aphis. I sprayed Peaches when the buds were pink. I am going to spray all the peaches with Kleenup and Lime Sulphur this season, so that speaks for itself."

Write for Suggestions for Winter Spraying

Victorian Agents—H. C. Pannifex & Co., 26 Market-street, Melbourne. Tel. Central 7375, 7376.

New South Wales Agents—The Australian Fruit & Produce Co. Ltd., Fruit Exchange, Sydney.

Queensland Agents—The Australian Fruit & Produce Co. Ltd., Fruit Exchange, Brisbane.

Tasmanian Agents—W. H. Ikin & Son, Hobart.

South Australian Agents—Silbert, Sharp & Bishop, Rundle-street, Adelaide.

West Australian Agents—Paterson & Co., Perth.

Just as we led the way with VOLCK, we now lead the way with a Winter White Oil—KLEENUP

VOLCK - KLEENUP - ORTHOL-K
Are All Made in Australia

ORANGES AT MURRABIT.

CONSIDERABLE SUCCESS has attended the operations of the Murrabit Packing Co. Commencing in a small way in 1928, by handling 5,820 cases, the business has developed to the handling of 38,259 cases in the year ending March 31, 1931. The company a. handles fruitgrowers' requisites, growers obtaining goods at lowest prices, also dividends: last season the dividend was 10 per cent. on the paid-up capital. Great credit is due to the managing-director, Mr. Dudley J. Walters and the Board of Directors, Messrs. J. A. Egan (Chairman); N. D. Cox, L. P. Clapp and J. H. Morton. The company's Blue Ribbon is favorably known in Australian, New Zealand and other markets.

Already this season shipments have been sent to New Zealand, Java, Hong Kong, Shanghai, Montreal, Vancouver, Canada, London and Glasgow, United Kingdom. Regular shipments will be leaving for Java each month as well as the New Zealand market, and possibly China.

A further large shipment will be leaving in August for Vancouver. The Canadian Trade Treaty should provide a large outlet for good quality citrus, and will tend to a very large degree to stabilise the industry. The exploitation of export markets is very vital to the citrus industry, and it is only through packing houses that these markets can be opened up satisfactorily.

The policy of the company is to assist growers to produce choice fruit by scientific manuring, correct irrigation, and sound cultural practices.

The belief is firmly held as regards organisation, that the first objective should be to secure the loyal co-operation of district growers, after which central control would be easy. The District packing house is essential for district co-operation.

At Murrabit each grower has the right to say where his fruit shall be marketed. Growers pay a levy to the V.C.C.A. on all fruit marketed outside the accredited agents.

Over 90 per cent. of the growers in the district pack all their fruit through the shed. With the young groves coming into bearing the success of the Murrabit Packing Co. can be said to be assured.—W.H.J.

CITRUS EXPORT.

Mr. S. E. Scott (Scott & Edwards, fruit exporters, Melbourne), writes urging the importance of the export trade in Oranges. He advocates shipping only the best quality, using softwood cases, wired and neat colored labels. Oranges should be carefully handled, and clipped, not pulled from the tree: bruises or punctures caused blue mould.

With regard to the New Zealand trade, Victorian Washington Navels sold from 10/- to 12/- per case on July 22 in Dunedin; Mandarins 9/- to 10/-, and Lemons 10/- to 12/- per case. Passionfruit, half cases, 14/-. The exchange of 18⅝% assisted to make returns more profitable.

Regret is expressed that N.S.W. citrus growers are sending large quantities to the South Island, it being understood that their shipments would be confined to the North Island.

On behalf of growers at Murrabit, Messrs. Scott & Edwards have been shipping Oranges to Sourabaya and Batavia with good results.

CARRIAGE OF FRUIT BY SEA

FRUIT SHIPMENTS FOR SYDNEY AND QUEENSLAND PORTS SPECIALLY CATERED FOR.

Regular weekly service of **Fast, Modern, Passenger Steamers**, fitted with ventilated 'tween decks and Refrigerator Chambers.

By special arrangement Fruit, etc., for **Sydney**, leaving Melbourne **Noon Saturdays**, is delivered on Sydney Wharf **6 a.m. Mondays**, ready for early morning market.

Fruit for **Brisbane**, leaving Melbourne **Noon Saturdays**, delivered Brisbane Wharf **8 a.m. Thursdays.** SPECIAL REDUCED RATES OF FREIGHT.

For further particulars and sailing dates, apply to:—

AUSTRALIAN STEAMSHIPS PTY. LTD.,
Howard Smith Ltd., Managing Agents, 35 Market Street, Melbourne, C.1. Tel. Cent. 8314.

AUSTRALASIAN UNITED STEAM NAVIGATION CO. LTD.,
MacDonald, Hamilton and Co., Managing Agents, 467 Collins Street, Melbourne, C.1. Tel. Cent. 9708.

ADELAIDE STEAMSHIP CO. LTD.,
505 Collins Street, Melbourne, C.1. Tel. Cent. 475.

HUDDART PARKER LTD.,
466 Collins Street, Melbourne, C.1. Tel. Cent. 8960.

McILWRAITH McEACHARN LTD.,
94 William Street, Melbourne, C.1. Tel. Cent. 9440.

MELBOURNE STEAMSHIP CO. LTD.,
31 King Street, Melbourne, C.1. Tel. Cent. 8693.

TRAVEL INTERSTATE BY SEA

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

NEW SOUTH WALES.

Sydney:
Chilton, F., City Fruit Markets.

VICTORIA.

Melbourne:
Cave, F., & Co., Melbourne.
Davis, J., Pty. Ltd., Wholesale Fruit Market.
Millis, A., & Sons, Wholesale Fruit Market.
Lister, G., Wholesale Fruit Market.
McLean, N. N., Pty. Ltd.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Wholesale Fruit Market.
Renouf, R., Wholesale Fruit Market.
Ross, J. W., Wholesale Fruit Market.
Silbert, Sharp & Davies, Wholesale Fruit Market.
Stott & Son, T., Wholesale Fruit Market.
Tim Young & Co. Pty. Ltd., Wholesale Fruit Market.
Vear, F. W., 49 William Street.
Wilson, H., Wholesale Fruit Market.
Woolf, G., Wholesale Fruit Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Wholesale Fruit Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., Temple Place, Macquarie Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

GREAT BRITAIN.

London:
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
The Port of Hull, London and N.E. Railway. Rep., Burns, Philp & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. **Rep., W. J. Wade, 8 Bridge Street, Sydney.**

Liverpool:
Johnson, T. S., & Co.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Astheimer, P. H., & Son, Fruchthof.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof.
Timm & Gerstenkorn.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.

GREAT BRITAIN.

London (8/7/31).

The "Bendigo's," the "Port Adelaide's" and the "Esperance Bay's" W.A. Apples were sold as follow:—Rokewoods, 12/- to 13/- per case; Doughertys, Yates and Tasmas, 12/- to 12/6; Romes, 12/-; Jons., 11/- to 11/6. The "Hertford's," the "Port Nicholson's" and the "Tongariro's" New Zealand fruit.—Doughertys, 12/6 to 14/-; Sturmers and Newtons, 10/- to 11/-; Statesmen and Rokewoods, 12/- to 13/-; Jons., 10/- to 13/-, and Delicious, 11/- to 13/-.

GERMANY.

We acknowledge having received from Timm & Gerstenkorn, fruit brokers, Hamburg, printed reports of auction sales of Australasian fruit. In the early part of the season the prices were excellent.

Market reports and prices were received throughout the fruit export season from J. H. Lutten & Sohn, Fruchthof, Hamburg.

Ph. Astheimer & Sohn, fruit brokers, Hamburg, have forwarded regularly their market reports, showing the prices received at auction. Vic. and W.A. Dunn's and Cleos. brought from M.12 to M.15.15 in mid-May.

QUEENSLAND.

Brisbane (24/7/31).—Tas. Apples: Jons. 8/- to 11/- case, Demos. 8/- to 11/-, Crofts 8/- to 10/-, S.T.P. 6/- to 8/-, S.P.M. 7/- to 10/-, G. Smith 11/-, F.C. 7/- to 9/-, yellow 4/- to 6/-, for Sturmers and French Crabs the market was rather slow. Tas. Pears: W.C. 7/- to 11/- case, B.B. 7/- to 8/-, B.D. 7/-; Queensland Oranges: special 6/-, others 3/- to 5/-; Mandarins, Glens, special 9/- to 11/-, others 5/- to 8/-; Scarlet, special, 6/- to 8/-, others 3/- to 5/-; Emperors 4/- to 6/-, Thorney 4/- to 7/-, Feutrels 3/- to 5/-, Excelsiors 3/- to 4/-, Ellendale 3/- to 5/-, Waratahs 4/- to 6/-, Grapefruit 2/6 to 4/- ½ case; Lemons 2/- to 3/- ½ case. Vic. Apples, Jon. 9/- to 10/-; Vic. Pears (W.C.), 11/- to 12/- case; Passionfruit, best 6/- to 7/-; second crop 2/6 to 4/- case; Papaws 2/- to 3/6, colored 4/-; Custard Apples 2/6 to 4/-; Pines, smooth 2/- to 4/-; Ripleys 3/- to 4/6 case.

WESTERN AUSTRALIA.

Perth (17/7/31).—R.B., flats 3/- to 5/6, dumps 5/6 to 9/6; Yates 3/- to 6/-, 6/- to 11/- (special to 12/6), G. Smith, 5/- to 8/-, 8/6 to 13/-, Cleo. 4/- to 6/6, 6/- to 10/6, Doherty 3/- to 5/6, 5/- to 8/- (special to 9/6), Jon., dumps 5/- to 9/-, Dunns 6/- to 10/- (special to 11/6), others 5/- to 9/6. Citrus, Navels, flats 2/6 to 4/6, dumps 4/- to 7/-; Lemons 1/6 to 4/-, Mandarins 3/6 to 8/- (special to 10/6), Oranges, plain, flats 2/- to 3/6.

NEW SOUTH WALES.

Sydney (23/7/31).—Apples, local, eating, Del. 7/- to 9/-, few to 12/-; R. Beauties 5/- to 9/-, Five Crowns 4/- to 7/-, G. Smiths 6/- to 12/-, cooking 5/- to 7/-, jam 2/-; Tas. Demo. and Croftons 5/- to 9/-; Del., Jons., Cleo. and Scarlets 5/- to 8/-; F.C. 5/- to 7/-, few 8/-, S.T.P. 3/- to 6/6, others 3/- to 6/- bush. case. Bananas (genuine grades), nine's and eight's 18/- to 22/-, few 24/-, seven's 15/- to 16/-, six's 8/- to 13/- case. Citrus fruits: Lemons, local, choice 4/- to 5/-, medium 3/-, small or inferior 2/-, irrigation 5/- to 6/-; Oranges, Common 2/- to 4/6, Navels

4/- to 6/-; irrigation 4/- to 6/-; Mandarins, Emperor 2/- to 5/-, Thornies 2/- to 7/- bush. case; Grapefruit 4/- to 7/-; Passionfruit, local 2/6 to 5/- ½ bush. case; Papaws 5/- to 9/- case; Pears, local, Packhams 6/- to 9/-; W.C. 5/- to 9/-; cooking 3/- to 5/-; Tas. Winter Coles 5/- to 10/-; Winter Nelis and Josephines 7/- to 9/- bush. case; Pineapples 5/6 to 8/- case; Tomatoes, Queensland, 6/- to 11/-, repacked to 13/- ½ case.

TASMANIA.

Hobart (24/7/31).—N.Y.P. 3/- to 5/-, S.T.P. 2/6 to 4/6, F.C. 3/- to 4/-, Demos. 3/- to 5/-, C.P.M. 4/- to 5/-, R.W. 2/6 to 3/6, S.P.M. 2/6 to 4/3, spotty and inferior lots 1/3 to 2/6 case; Pears (spotty) 2/- to 3/- case.

VICTORIA.

Melbourne (24/7/31).—The Wholesale Fruit Merchants' Association reports prices as follows:—Apples 5/- to 7/-, few specials higher; Bananas, Queensland, green, 9's and 8's 15/- to 16/-, 7's 14/- to 15/-, 6's 10/- to 13/- per double-case; selected fruit for country trade higher; rust affected lines lower. Grape Fruit, 4/- to 6/-. Lemons, 2/- to 4/-, few higher, Navel Oranges, 4/- to 7/-, few special higher; Common Oranges, to 5/-. Mandarins 5/- to 7/-, few special lines higher, small, difficult to sell at lower rates. Pineapples 6/- to 7/6, a few 8/- per double case. Passionfruit 6/- to 11/-, few special higher.

The Melbourne manager of the Federal Citrus Council of Australia reports that sales were as follow:—Navel Oranges, average standard, large 4/- to 5/-; best counts, to 6/-; a few selected lines, unwrapped, to 7/-; a few selected wrapped lines to 8/-; some higher. Lemons, 3/- to 5/-. Grape Fruit, 54-75, 6/- to 8/-; a few selected lines higher. Mandarins, 6/- to 8/-; a few selected lines higher, Common Oranges, to 5/-.

NEW ZEALAND.

Dunedin (17/7/31).—Messrs. Reilly's Central Produce Mart report prices as follows:—Apples: Jonathans, choice 5/6, 7/-, small 3/-, 5/-, others 4/-, 6/-; Sturmers, choice 7/-, 8/-, small 3/6, 5/-, cookers 5/-, 6/6; Delicious, 7/-, 10/-, small 4/-, 6/-. Pears: Winter Coles, half cases 3/6, 5/6, Winter Nelis, half case, 3/6, 6/-. Australian Navels, 6/6, 14/-, according to size; Poorman's, 9/- to 12/-; Australian Lemons, 12/- to 16/-; Passions, N.Z. wanted Australian 16/6; Mandarins, 14/-, 15/-; Pines, 15/-, 18/6; Bananas, choice Samoans, ripe 20/-; Coconuts, 12/6 sack.

PORTLAND DISTRICT.

There is a very heavy showing of buds in this district in the Apple orchards, being heavier than usual owing to the practical total failure of the crops last year.

The majority of the growers are in the midst of pruning, and are cutting very heavily. The trees having made wonderful growth, it is a good opportunity to cut out old stuff and rebuild the trees.

The cool store at Gorae did not run this year owing to the shortage of Apples, but if there is anything like the crop which is expected next season it should be filled without any trouble on the part of the owners.—H. A. Williamson.

TAR SPRAY KILLS PEACH APHIDS.

Marked Advance in Pest Control.

A marked advance has been made during the last two years in the control of orchard pests, such as the green Peach aphis, which has often proved extremely difficult to check. This has been brought about by the introduction of tar distillate sprays, which will not only control this particular pest, but many others. Trials conducted on the Murrumbidgee Irrigation Area and elsewhere in this State have proved the efficacy of this preparation, which, as its name denotes, is a product of coal tar.

The Government entomologist, Mr. W. B. Gurney, states that green Peach aphis and Cherry aphis can be definitely controlled by spraying late in July. The spray will destroy the eggs, and will obviate the spraying of trees with nicotine sulphate in the spring. Tar distillate, however, is a spray that can only be used in the dormant season of the trees, that is, while they are bare and before spring growth begins.

The quantity recommended by the Department of Agriculture is one gallon of tar distillate to 35 gallons of water. Slight burn was observed in trees sprayed with one gallon in 25 gallons of water, therefore the weaker solution is generally advised. Should the aphids appear in spring it would be necessary to spray with nicotine sulphate, but experience has shown that where the tar distillate spraying has been thoroughly carried out this is rarely necessary.—"Sydney Daily Telegraph."

Renmark Oranges for the King.—Under the auspices of the Murray Citrus Association, a case of faultless Oranges was recently packed by Messrs. Ritchie & Son, of Renmark, for despatch to His Majesty the King. The case contained 90 Oranges.

F. CHILTON
ESTABLISHED 1894
FRUIT COMMISSION AGENT
Licensed under Farm Produce Agents Act
Highest Market Prices — Prompt Returns — Reliable Advice
Registered Address for Telegrams and Cables, "CHILTONS"
References :— Bank of N.S.W., Haymarket, Sydney and Growers throughout Australia
CITY FRUIT MARKETS, SYDNEY

A Fruit Yield Free From Blemish
is invariably the happy experience of the
Grower who uses——

"VALLO" Sprays

They Have Been Proved 100 per cent.
Efficient Over a Period of Many Years.

ORDER NOW!—
"VALLO" LIME SULPHUR WASH, RED SPRAYING OIL, "HOME-MADE" BORDEAUX, NICOTINE SULPHATE 40 PER CENT., ARSENATE OF LEAD, PREPARED WHITE OIL, ARE BUT A FEW OF THE MANY "VALLO" PRODUCTS.

Further Particulars on Application.

Manufacturers:
VICTOR LEGGO & FARMERS LTD., Melbourne
Agents All States.

VALLO
SPRAYS THAT PAY

RETAIL FRUITERERS' ASSOCIATION.

THE monthly meeting of the Executive of the Melbourne and Metropolitan Retail Fruiterers' Association was held in the Temperance Hall, Melbourne, on July 2, there was a fair attendance of delegates present.

A general discussion took place in reference to the great amount of thieving at the Victoria Market during the early hours of the morning. The Secretary reported that owing to so many thefts from both growers' and retailers' carts, he had been successful in getting more police, but owing to the decreased strength of the force he had not got as many extra men as desired, but he was pleased to state that the officials of the City Council had been instrumental in the arrest of several suspects during the last few weeks. He regretted to state, however, that in most instances the light punishment inflicted was not much deterrent to the evil.

General satisfaction was expressed that the Assistant Minister of Agriculture had at last given instructions that all offenders against the fruit and vegetable packing bill had to be immediately prosecuted, although this order is somewhat belated, it is to be hoped it will have the desired effect.

The Secretary also reported the Markets Authorities had placed a new set of scales in a central position in the market, which no doubt would be of great assistance to both growers and buyers.

COMMENTS ON THE RETAIL TRADE.

TRADE during the month has been very depressed, and retail shopkeepers are having a trying time, and although prices have been reasonable, many retail fruiterers have been forced to relinquish business. There has been very little alteration in the price of most fruit, and although it is very moderate, the public are unable to purchase only in very small quantities.

Citrus fruits are coming in of better quality, but are not selling any better.

Victorian Apples are being marketed in fair quantities, as well as some from Tasmania, and there has been very little demand for them also.

Lemons are very plentiful and prices are exceedingly low, many growers have great difficulty in disposing of what they bring in to market.

Bananas and Pineapples have been plentiful, and the weather being so cold they have been hard to dispose of, although the Pineapples have been of excellent quality.

Owing to the wet weather, vegetables are beginning to get very scarce, and prices are rising accordingly.

French Beans are also arriving from Queensland, and Celery from Adelaide, and these are greatly augmenting local requirements. Potatoes and Onions are still very plentiful.—Edw. W. Thompson, Secretary Melbourne and Metropolitan Retail Fruiterers' Association.

The cheapest form of quickly effective yet long-lasting nitrogen, is stated to be in sulphate of ammonia. Information and advice is obtainable from—Nitrogen Fertilisers Pty. Ltd., 360 Collins-street, Melbourne. For list of agents in other States, see advertisement in this issue.

In order to obtain a fruit yield free from blemish. Vallo sprays are advertised by Messrs. Victor Leggo & Farmers Ltd., Melbourne. There are agents in all States.

PLENTY OF EGGS—
Both Winter and Summer

IN his letter which we publish below, Mr. McDermott relates with some considerable pride how different travellers who had called at his place had remarked that they had never seen fowls in all their travels that looked as healthy as his. Naturally the appearance of his birds is a source of satisfaction to Mr. McDermott, but we imagine that what gives him even greater pleasure is the knowledge that egg-production has also improved. From 5 and 6 eggs per day to 7, 8 and 9 eggs per day, is a pretty good increase in one fortnight—an improvement that any poultry-keeper would be proud of.

Mr. McDermott obtained these results only by using Karswood. He is so satisfied, that he now gives it to all his fowls, with the result that he always has eggs, winter and summer.

I Always Have Eggs.

I would like to let you know what results I have obtained from your Karswood Poultry Spice. I first gave it to 9 Black Orpington Pullets 6 months old; they were laying 5 to 6 eggs per day, but after a fortnight of Karswood Spice, I got 7, 8 and 9 eggs per day and they kept same up for the winter months. I now give it to all my fowls with the result I always have eggs winter and summer, and again my fowls always look healthy. Different travellers who have called at my place say they have never seen fowls in all their travels that looked as healthy as mine. Again thanking you for your great help. I might say you can use this as you like.

(Sgd.) GEO. McDERMOTT,
Amphitheatre, Vic.

MAKE THIS TEST.

Go to your local grocer, storekeeper or producer dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a-dozen of your birds in accordance with the directions on the packet. Do not expect immediate results—Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

SUPPLIES.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½ lb. packet, price 1/-; 1 lb. packet, price 2/-; 7 lb. tin, price 13/-; 14 lb. tin, price 25/-; 28 lb. tin, price 48/-

KARSWOOD
POULTRY SPICE
INCREASES EGG-PRODUCTION WITHOUT FORCING

Poultry Notes

Eggs for Hatching.

Need for Careful Selection.

THE first consideration in regard to incubation is the class of eggs most suitable for the purpose (writes the Poultry Expert of the Department of Agriculture, N.S.W.). The necessity for careful selection of eggs for incubation is well recognised by all experienced breeders, and is a vital factor for the production of rearable chicks and strong stock.

Small eggs are laid by immature or degenerate layers, and the use of such birds as breeders must be strictly avoided. All eggs used for incubation should be at least 2 oz. in weight, and, even early in the season, when there may be a shortage of eggs, it is better to leave the incubators only partly filled rather than use unsuitable eggs. Eggs for incubation should be as normal and even as possible in size, shape, and texture of shell, and any with thin, misshapen, and porous shells should be eliminated; also eggs that are abnormally large; for instance, those weighing over 2½ oz. should not be included, as in most cases they are infertile.

The aim should be to build up flocks capable of maintaining sufficient stamina to withstand the strain of high production, and proper selection of eggs for incubation is one important step in that direction. The freshness of eggs is also a factor which will affect hatching results, and the longer the eggs are kept over one week the less are the chances of a good hatch, especially in the case of artificial incubation. If set under a hen, eggs will often hatch well even if two or three weeks old, but when stored for a longer period than a week it is a good plan to place them in a box with the large end slightly inclined upwards, and cover them with bran. They should also be turned each day, and this can be done by turning the box over.

The temperature in the room in which the eggs are stored should be kept as even as possible. Breeders in a small way, who have only one or two incubators, may find it necessary to keep eggs a little longer than the prescribed period rather than discard them, and the exercise of a little care in storing stud eggs awaiting the time when they can be placed in the incubator will materially asist in preventing deterioration. It is well to remember, however, that two weeks is the limit that eggs for artificial hatching can be kept, even under proper conditions, with any hope of obtaining reasonably satisfactory results.

Green Feed for Chick Runs.

Question:

"D.C.W." (Buninyong), writes:

What green feed would you advise to sow in chicken runs, and what time do you sow the seed?

Answer:

One of the best green crops to sow in chicken runs is

Wimmera rye grass, the seed of which should be sown about the middle of May. Some poultrymen prefer rape, but this is apt to grow rather high for young chicks, and when they get into it in wet weather they become drenched. Wimmera rye on the other hand provides plenty of good pickings, and also a good thick carpet of grass for the chickens to exercise on.

Ailments Amongst Pullets.

Questions:

"T.R." (North Shore), writes:

I have a White Leghorn pullet, the comb of which went dark blue, and when I put my hand on the comb it was as cold as ice. I treated the bird with salts mixed with a warm mash, and it seems to have got right again.

I have another bird which I noticed to-day with a swelling on one eye. I picked it up and bathed it. From what I can see it seems to be a complaint I had with one before, which I destroyed, and when I cut it open it was like a large ball of cheesey matter. Could you tell me the complaint, cause, and how to treat same.

Answers:

Your White Leghorn pullet which developed a dark blue comb which was cold to the touch, seems to have been affected with liver trouble, and the treatment of Epsom salts which you gave it was quite correct.

The other fowl, however, with the swelling on the eye and the one which you previously destroyed, were no doubt suffering from a form of roup. Destroy and burn the carcase of the dead bird. The affected bird should be isolated and the pens disinfected. Bathe the head daily in a solution of Condy's crystals mixed to about the color of red wine. Place the bird in a warm, dry pen, feed on soft food, and in addition to the Condy's crystals bathing, treat with one of the advertised roup cures.

R. W. McLean's Light Sussex Cock, 1st at Brighton Show.

MILDURA VINE GROWERS JUBILANT.

"Vine growers in Mildura are very jubilant over the prospects for the coming season, as they have disposed of the whole of their surplus stock, and the new season's output of dried fruits will go on to a bare market." So writes Mr. J. Small (William Cooper & Nephews, Australia, Ltd.).

"In addition to this, the trade treaty with Canada means an increase in the price of Sultanas; the heavy exchange is all in favor of export. Now news is to hand that the dried fruit crop in Smyrna is badly affected with downy mildew. So the prospects for the Australian trade are bright."

"LIGHTNING" EQUIPMENT.

Citrus Processing and Grading Plants.

The Lightning Fruit Grader Co., a pioneer organisation, for the grading of fruit has developed its enterprise in the work of processing grading and packing of citrus for Australian and export markets. This company has specialised in the installation of complete processing equipment for citrus fruits. The plant installed by the "Lightning" Company at Cobram, Vic., has given good service. This season five more plants have been installed, as follows:—Aurora Packing Co., Mildura; Mildura Co-operative Fruit Packing Co. (Merbein branch); Curlwaa, Yenda, and for Mr. Ben Jones at Leeton.

At the recent opening function at the Aurora Packing House, Mildura, the excellence of the Lightning equipment was referred to in favorable terms.

F. CAVE & CO. PTY. LTD.

Mr. Fred. Cave (F. Cave & Co. Pty. Ltd.), Wholesale Fruit Markets, Melbourne, has developed a considerable local, interstate and export trade in fruit.

Regarding export, Mr. Cave stated in a recent interview that it had been amply demonstrated that selection of varieties for the export markets was most necessary. For instance, it was unwise to send small fruit to the North of England—nothing under 2½in. should be sent there: on the other hand, the smaller fruit was desired in London, and the markets there would profitably take Apples up to 2½ inches.

Regarding cases, Mr. Cave stated he was consulting his principals in England, in order to obtain their definite opinion as to the most suitable cases for the export of Australian Apples and Pears. If other exporters would act similarly, the concensus of opinion would be valuable.

* * * * *

Regarding the Australian trade, Mr. Cave reports having developed satisfactory business connections with all the Australian States; his firm handles large quantities of berry fruit, particularly Black Currants from Tasmania.

The firm's premises are well suited for the display and storage of fruit.

With regard to Tomato trade, consignments are shortly expected from Western Australia.

Owing to the continued dry weather in Bowen, Queensland, however, Tomatoes from that centre will be considerably lessened in the coming season. Mr. Cave's representative, writing from Bowen on July 24, said rain was badly wanted, and unless they got rain very shortly, there would be very few Tomatoes to send anywhere. In any case, the coming crop would not be over 20 per cent. of last year's figures. Sympathy was expressed for the Bowen Tomato growers in this connection, especially as they had gone to considerable trouble to improve their pack to suit the southern markets.

1931 Fruit Export Season.—Mr. J. M. Ward, Superintendent of Horticulture, Victoria, recently gave a broadcast talk on the subject of the 1931 fruit export season. Victoria shipped 361,234 cases of Apples, 215,767 packages of Pears, and 9,800 packages of Plums in the 1931 export season, as compared with the 1930 figures as follows: Apples 877,469 cases, Pears 153,560 packages, Plums 911 packages. The importance of the pre-cooling of Pears is emphasised. There was a noticeable improvement in the packing, grading and appearance of cases.

Outstanding features of the new improved "Lightning" sizer and "Lightning" new sorting elevator, are given in the advertisement of the Lightning Fruit Grader Company, 517 Albion-street, W. Brunswick. These are stated to give 100 per cent. efficiency with Lemons, Mandarins and any flat fruit.

End of season orders for strong, healthy, well-grown fruit trees are promptly despatched by C. J. Goodman, Picnic Point Nurseries, Bairnsdale, Vic. Catalogue, Price list, etc., is posted free on application.

TASMANIA

Leading Australian Firm of Fresh Fruit Exporters.
Manufacturers IXL Jam and Canned Fruits.
Hop Factors—Largest Cool Stores for Hop Storage in Commonwealth.
All Orchard Supplies available at all times.

Agents for—

Associated Evaporated Apple Manufacturers, Eagle, Star & British Dominions Insurance Co. Ltd., Federal Steam Navigation Co. Ltd., Scottish Shire Line of Steamers, Osake Shosen Kaisha.

Correspondence Invited.

H. JONES & CO. LTD.
HOBART.

PATERSON'S
CLENSEL
Insecticide and Fungicide
BRITISH PRODUCT
Used throughout the World for 30 Years

Read the following sound advice from the
MANUFACTURERS OF CLENSEL

There is another very important point which we cannot emphasise too strongly, and this refers very specially to trees and bushes. The great secret is not to wait until the pests make their appearance, but to **spray the plants, trees or bushes with a dilute solution of Concentrated Clensel Insecticide and water**: anything from a 1 per cent. to a 6 per cent. solution while the pests are invisible and in the larvae stage, and this spraying process should then be repeated at intervals of round about two to three weeks throughout the season.

For years many growers were averse to adopting this procedure, but many have told us that the actual cost of this is many times wiped out by the increased production which they receive, coupled with the fact that their Gardens and Orchards are in perfect condition, which represents thoroughly sound capital.

"Clensel" is non-poisonous, non-inflammable, destroys insect and fungus pests—also a tonic for all trees and plants.

AUSTRALIAN DISTRIBUTOR—Bruce Anderson, 54A Hoddle St., Abbotsford, Victoria.
WEST AUSTRALIA—Messrs. Bernard Shaw & Co., 53 St. George's Terrace, Perth.
SOUTH AUSTRALIA—Messrs. T. Paltridge & Sons Ltd., Mount Barker, South Australia.
TASMANIA—F. W. Debnam Pty. Ltd., Burnett Street, Hobart.
NEW SOUTH WALES.—Distributor Wanted.
QUEENSLAND—The Fertilizers Distributors Ltd., Roma Street, Brisbane.

Excellent Reports being received from all over Australia

L. P. Rosen & Son, Fernhill Nurseries

Are now booking orders for all kinds of Fruit Trees, including Citrus, of which 100,000 are available, including some 15,000 Valencias and 5,000 Washingtons, grown from buds supplied by the Bud Selection Society.

Catalogues and Quotations Free on Application.

SPECIALTIES—FRUIT TREES, ROSE PLANTS, and KUNDE SECATEURS, Etc.

Pennant Hills Road, CARLINGFORD, N.S.Wales

-LEMONS-

We are the largest Buyers in Australasia

C. M. BROOKE & SONS
73 Whiteman St., South Melbourne, Vic.

PATENTS
GEORGE A. U'REN
PATENT ATTORNEY
"HEATY HOUSE," 499 LITTLE COLLINS St
MELBOURNE.

"Fruit World Annual"

Comprehensive review of Australian and New Zealand fruit industry.

"The Fruit World," Box 1944 G.P.O., Melbourne.

THE FLY OF THE PEACH ORCHARD.

(Translation from "Fruitografico," March, 1931.)

Of the insect plagues most damaging to Peach orchards, especially to those varieties which do not ripen until July and August (corresponding to January and February in Australia), are the fly (Ceratitis capitata) and aphids.

The fly with its sting places many little eggs in the interior of the fruit and the large number of larvae from these feed on the pulp, causing what agriculturists call "Peach pockets," rendering useless a large part of the fruit crop.

The aphids cause loss of the leaves, those indispensable organs for respiration and nutrition of trees, resulting in fruit not making healthy development and, what is still worse, causing rapid ageing of the trees.

In combating the fruit fly one should begin by attacking the aphids, since experience has shown us that those areas of Peach orchards most subject to "Peach pockets" have been those most infested by aphids. These latter insects secrete a sweetened liquid much liked by the fly, which, finding food in these trees, shows a preference for them, stinging the Peaches and depositing eggs in their interior.

The most effective remedy against the aphids consists in spraying the orchards with soap and nicotine products which cover them, preventing respiration and killing the insects by asphyxiation. This should be done before the insects begin to destroy the leaves.

The most modern method of fighting the fruit fly, according to Engineer Doroniz, consists in hanging in the Peach orchards small glass fly-traps in which water and vinegar are placed. The fly has a great liking for this liquid, and dies of suffocation in it before having a chance to light on the fruit.—Monthly Bulletin, California Department of Agriculture.

Consequent upon the recent theory of a famous French chemist that the air contains alcohol, the favourite invitation in Aberdeen is to take a deep breath.

Force of Habit.

During a hold-up in Chicago a young male stenographer was hit by a bullet. Thinking he was mortally wounded, he whispered to a friend:

"Write to Mamie. Give her my love, and tell her my last thoughts were of her. Carbon copies to Sadie, Peggy and Kathleen."

Do not run any Financial Risk with your Fruit but Consign it to

HEDLEY GEEVES LIMITED

Telegraphic Address: "Apples, Brisbane."
(Hedley Geeves, Managing Director)
Registered Shipping No. 6.

FRUIT EXCHANGE——BRISBANE

SELECTED AGENTS FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

SUPPORT CO-OPERATION

By Consigning your FRUIT to the

Producers' Distributing Society Ltd.

(Late Coastal Farmers' Co-operative Society Ltd.)

—— Agents for ——

"BLACK LEAF 40"
and all Orchard Requirements

Melbourne Sydney
Newcastle Hobart
Launceston Devonport

Cooksley & Co.

(W. P. COOKSLEY)
Reliable Fruit Agents
Over 30 Years Experience
TRY THEM!

Telegraphic Address: 'COOKSLEYS," BRISBANE

Fruit Exchange, Brisbane
QUEENSLAND
Shipping No. 29

Reference: Commercial Banking Co. of Sydney Ltd.

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Ship Your Oranges, Lemons, Grapes to New Zealand

All consignments for this market will have careful attention and realize highest prices if sent to

The Co-operative Fruitgrowers of Otago Limited, Dunedin

Personal supervision of every consignment.

Cheques posted promptly.

Drop us a Line or Cable "Peachbloom," Dunedin.

The Royal Agricultural Society of Victoria

GRAND ANNUAL EXHIBITION

9 DAYS

17th to 26th September, 1931

Fruitgrowers!—This is the Show at which you should exhibit

ADVERTISE your PRODUCE—IT PAYS

Over £400

is offered in PRIZE MONEY, in addition to FOUR HANDSOME SHIELDS

ENTRIES CLOSE Saturday, 15th August, AT NOON

Prize Schedules, Entry Forms, etc., on application to—

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Temple Court, 422 Collins Street, Melbourne.

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Comprehensive review of Australian and New Zealand fruit industry.

"The Fruit World,"
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Citrus Deciduous Roses Ornamentals

QUALITY VERY PRIME FOR 1931
STARTLING REDUCTIONS IN PRICE

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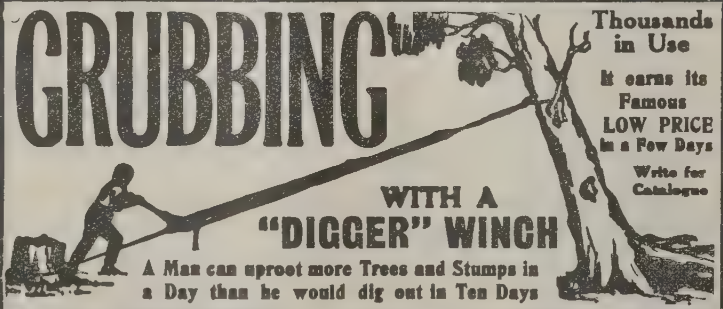

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Thousands in Use

It earns its Famous LOW PRICE in a Few Days

Write for Catalogue

WITH A "DIGGER" WINCH

A Man can uproot more Trees and Stumps in a Day than he would dig out in Ten Days

QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria

READ THE

"Australasian Poultry World"

Something of Interest for every Poultry Breeder.

All Newsagents 6d. *per Copy*

Fertilisers for Fruit Trees.

Value of Indicator Plots.

Fruit trees will always benefit from the application of organic manures (ploughed in during the winter), but owing to the variation in soil and other conditions it is impossible to prescribe any hard and fast formula so far as artificial fertilisers are concerned. The only reliable method of ascertaining the best mixture to apply, states a departmental pamphlet, is by use of indicator plots, and such plots should be maintained in every orchard, even after what appears to be the best mixture has been arrived at.

This, it must be remembered, can only be an approximation, and an excess of one or another plant-food may be applied. In the case of phosphoric acid or potash an excess will generally accumulate in the soil, so that after a few years possibly the fertiliser can be changed to reduce that ingredient which has evidently been over-supplied. It is only by maintenance of indicator plots that this can be detected, and the fertiliser application economically regulated.

WINTER TREATMENT FOR BLACK PEACH APHIS.

A miscible oil spray, diluted 1 part to 25 parts of water by volume, has been found satisfactory for the control of black Peach aphis when the aphid is found on the trees during the dormant period. Oil spray at this strength should not be used later than when the buds commence to swell. If lime-sulphur is to be used during the dormant period on Peach and Nectarine trees to control leaf curl, the lime-sulphur should be applied first and the oil three or four weeks later.

To avoid two applications when the trees are dormant a combined spray of lime-sulphur and tobacco extract may be used.

When combining sprays it is important that both ingredients are in the right proportions to the total quantity of spray liquid.

Take courtesy out of the foundation and you haven't a chance to build for permanent success.

M. ASVARISCH

FRUIT BROKER

Copenhagen - Denmark

Consignments Received. Jorks Passage.
Telegraphic Address: Asvarisch, Copenhagen.

Inquiries for Victoria and South Australia.
to
J. B. MILLS & CO.
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BAVE-U Power Sprayer

The best and most reliable sprayer known. Easy to operate—no chocked nozzles.

Full particulars supplied with pleasure by the manufactures

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Grown for Sale by
C. A. Nobelius & Sons Pty. Ltd.
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Telephone: Ringwood 171 **Catalogue on Application**
Inspection Invited

"FRUIT WORLD ANNUAL."

Comprehensive review of Australian and New Zealand fruit industry

"The Fruit World," Box 1944 G.P.O., Melbourne.

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Consignments solicited. One Trial Invited. Best Prices obtained. Prompt Advice and Payment.

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F. CAVE, *Managing Director*

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HIGHEST PRICES
and
PROMPT RETURNS

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"WE STRIVE TO PLEASE"

Neptune Prepared Spraying Oils "A" and "C."

NeptuneLimeSulphur Solution.

Neptune White Spraying Oil.

Neptune Spray Spreader.

Berger's Arsenate of Lead (Paste or Powder.)

GenuineBlackLeaf40.

Sicilian Sublimed Sulphur.

Australian Powdered Sulphur.

Write for our free booklet for full details of above sprays.

Clean fruit Assured—

when Neptune Sprays are used

Don't take risks with inferior materials—always specify the best. Neptune spraying preparations are obtainable through Agencies and Associations all over Australia, or direct from the Neptune Oil Company Limited.

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SPRAYING MATERIALS

NEPTUNE OIL COMPANY LIMITED
Melbourne Sydney Brisbane Adelaide Perth Hobart Launceston

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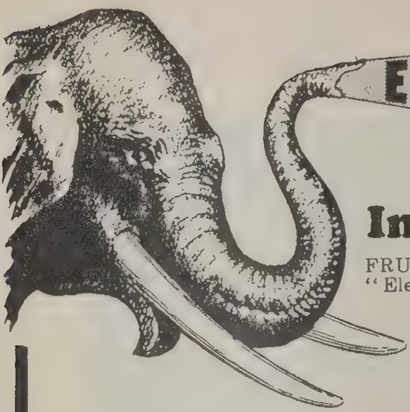

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Insist Upon It!

FRUIT GROWERS generally have come to depend on "Elephant" Brand Sprays. They find them absolutely reliable, efficient and of guaranteed quality.

For this Season Use Only "ELEPHANT" Brand

Spray Now with

"Elephant" Brand Prepared Red Oil

PRICE IS COMPETITIVE — QUALITY STANDS ALONE

ONCE USED, ALWAYS USED

Remember :—"ELEPHANT" BRAND Stands for Quality

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WRITE FOR PRICES AND PAMPHLET

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The Future of the Fruit Industry.

In Times Like These—"*He Profits Most Who Packs Best.*"

THE future of the fruit industry is exercising the minds of everyone engaged in it. The production in Australia of fruit of high quality and of general good appearance has not proved at all difficult, and it is justly claimed that in Australia can be obtained fruit equal and, in fact, superior to that in any part of the world. The greatest drawback and the cause for more complaint with Australian fruits is the manner in which it is put up for sale and the lack of selection for color, size, quality and appearance.

The difficulty of packing fruit to conform with the world's best standards has been apparent to the Australian fruitgrower for many years, and quite a lot has already been done to remedy the defects. Quite a lot more has to be done, and it has been undoubtedly established that the future of the industry in comparison with any other, subject to improved methods of packing, is particularly bright.

Grading and Processing Machinery for All Classes of Fruit.

The early recognition of the requirements of the industry was responsible for the invention of the "Lightning" fruit grader and fruit machinery. The story of the progress of the Lightning Fruit Grader Co. is a very interesting one, and its success in supplying machines of wonderful assistance to the growers of every class of fruit, justly entitles this company to claim that it has been of more tangible assistance than any one organisation associated directly or indirectly with the industry. To develop and perfect the numerous machines manufactured by this company it has been necessary to expend many thousands of pounds and many hours of close thought and labor. Fruit machinery is a specialised production possible only by those who have an intimate knowledge of fruit handling under every condition and cannot be undertaken lightly by any other than practical fruit men. This will be better understood when it is recognised that the machines are required to take the place of manual labor and the work must be done more accurately, more efficiently, and more quickly than can be done by hand, and yet without injury to the fruit.

Complete Washing and Sterilising Plants for Citrus.

The Australian fruitgrower has been rather conservative in the adoption of machines to assist him and the development of the "Lightning" fruit machinery has been in proportion to the industry's requirements. As a matter of fact, machines have been available two or three years before the growers were ready to take advantage of them. For years the citrus section of the industry made enquiries into the various methods of washing and sterilising their fruits, but nothing tangible was done until the Lightning Fruit Grader Co. made available the equipment to do this. It is over four years since a complete washing, sterilising, waxing, sizing and packing outfit was loaned to and set up at the Government Cool Stores for the Council for Scientific and Industrial Research by this company. The information obtained with fruit processed by the Committee under the supervision of Dr. Young has been of such value that the equipment has already been installed by packing houses at Irymple, Leeton Merbein, and Curlwaa. Washing and drying equipment has been in use for a number of years at Cobram, Shepparton, Perricoota and Madowla Park, etc.

Almost every packing house in Victoria, New South Wales, West Australia, South Australia, Queensland and Tasmania have installed "Lightning" fruit graders and accessories, and in every fruit area these machines are in use. It is a common expression amongst those who visit the different areas that "Lightning" graders are everywhere.

Is it any wonder that in less than ten years this business has grown from small dimensions until an area of over an acre is necessary to house the plant and machinery required to manufacture the machines it supplies? Efficient machinery is indispensable to the grower, and the standard of efficiency and construction built into the machines recommends them to the growers and packing houses. From a small unit for the individual grower to machines of enormous capacity are produced in this factory under the most careful supervision of experienced men who have a complete knowledge of what is necessary to handle fruit.

The Department of Agriculture has done much valuable work in making charts of standard packs, and the part that "Lightning" equipment is playing in educating those engaged in the fruit industry into the need for steadily increasing the output of a standardised pack is evidenced by the prominence that is given to models staged in the departmental exhibit at the Royal Agricultural Society's Show and on the Better Farming Train. It is a silent acknowledgment of the fact that every effort must be made to standardise our packs and that "Lightning" equipment is selected as the means by which this objective can be obtained.

A Careful Study of Packing House Difficulties.

The Australian fruitgrower is better catered for than the growers in many parts of the world. Their packing house difficulties have been studied and solved for them As fruit is a highly perishable product, it can only be handled by machines which are correct in principle. Numerous grading devices have from time to time been offered to growers, but none have survived the test of accuracy without injury, and have been discarded in favor of the "Lightning." Mainly because fruit can be packed in a more or less diffident manner by manual labor some growers have been inclined to think that any sort of machine will do, until its defects become apparent under practical working conditions—hence the productions of machines of incorrect principle and inffectiveness in operation, calling to mind Ruskin's warning: "There is hardly anything in the world that some man cannot make a little worse and sell a little cheaper, and the people who consider price only are this man's lawful prey."

Every industry must go ahead or go back; it cannot stand still. This has been recognised by the Lightning Fruit Grader Co., despite the fact that it is without serious competition. Every improvement that can be successfully applied has been incorporated in their machines, and most of these improvements have been invented and developed in their own factory. Many patent rights are held over the distinctive features contained in the machines. The "Lightning" grader was the first successful grader made in Australia. It has been improved to such an extent that it is still the only grader that can claim to accurately size all varieties and classes of fruit without injury.

The manufacture of the special packing house equipment was taken up by the Lightning Fruit Grader Co., as mentioned previously, who pioneered them through all the various stages to success, proving that they are always willing to do anything called on to help this great industry.

As they were the first to put their shoulder to the wheel, so they will continue, and always be first in the industry, giving a wholehearted and unselfish service. Their exhibit at the Melbourne, Adelaide, Hobart, Launceston shows will, as usual, be interesting and instructive, and well worth inspection. *

MODERN CASE LABELLING

The exhibits illustrated on this page are from specimens supplied by **Messrs. TROEDEL & COOPER Pty. Ltd., Label Specialists, of 86 Bay St., Port Melbourne.**

This firm has for years been advising Australian Fruitgrowers as to the best method of helping the sale of their fruit by indicating on the outside of the case, the quality of the product inside.

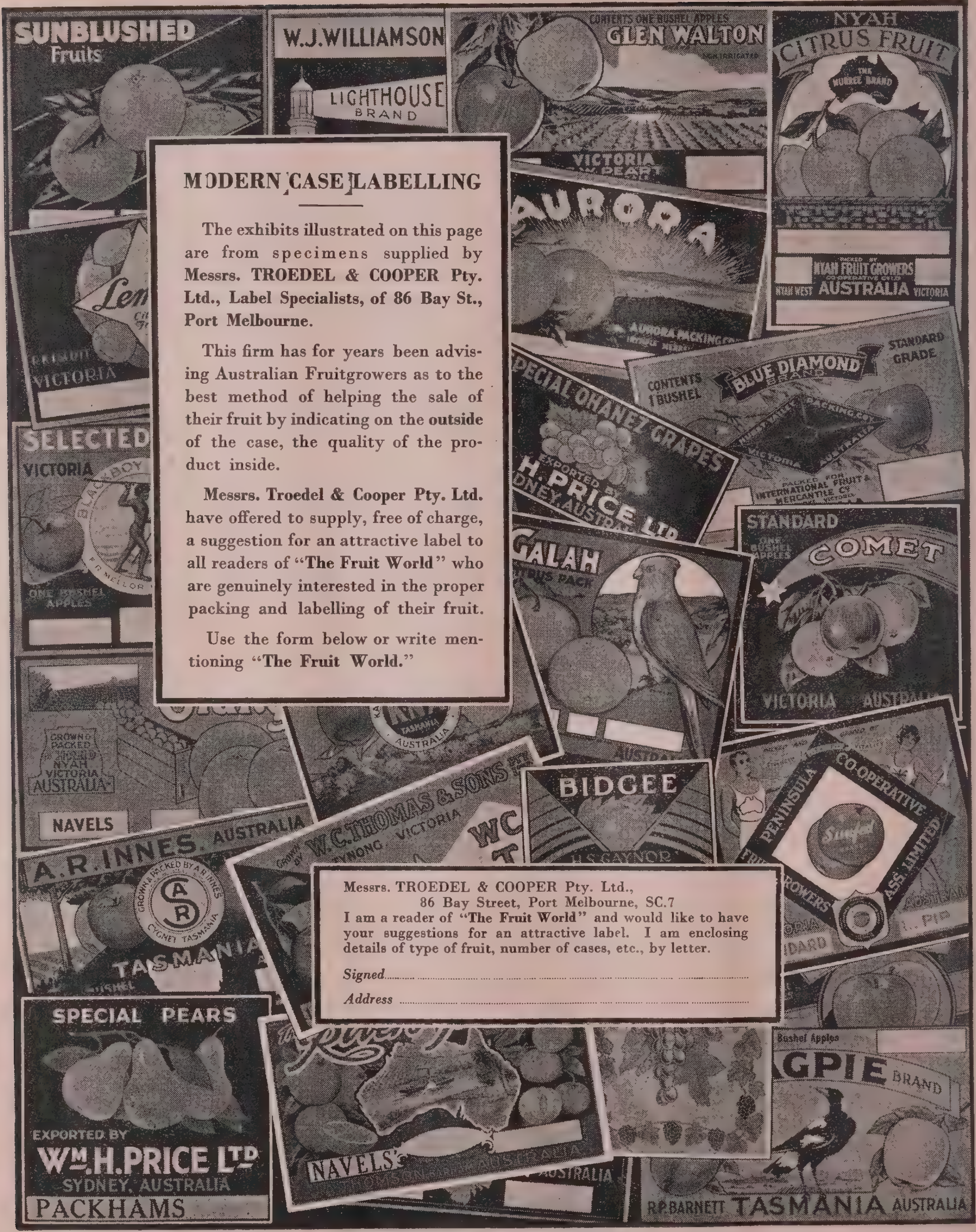
Messrs. Troedel & Cooper Pty. Ltd. have offered to supply, free of charge, a suggestion for an attractive label to all readers of "**The Fruit World**" who are genuinely interested in the proper packing and labelling of their fruit.

Use the form below or write mentioning "**The Fruit World.**"

Messrs. TROEDEL & COOPER Pty. Ltd.,
86 Bay Street, Port Melbourne, SC.7
I am a reader of "**The Fruit World**" and would like to have your suggestions for an attractive label. I am enclosing details of type of fruit, number of cases, etc., by letter.

Signed..

Address..


SUNBLUSHED Fruits
W.J. WILLIAMSON
LIGHTHOUSE BRAND
CONTENTS ONE BUSHEL APPLES
GLEN WALTON
VICTORIA
NYAH CITRUS FRUIT
THE MURREE BRAND
PACKED BY NYAH FRUIT GROWERS CO-OPERATIVE LTD
NYAH WEST AUSTRALIA VICTORIA
AURORA
AURORA PACKING
VICTORIA
CONTENTS 1 BUSHEL
BLUE DIAMOND BRAND
STANDARD GRADE
PACKED FOR INTERNATIONAL FRUIT & MERCANTILE Co
SPECIAL OHANEZ GRAPES
EXPORTED BY
H. PRICE LTD
SYDNEY AUSTRALIA
SELECTED
VICTORIA
BLACKBOY
ONE BUSHEL APPLES
STANDARD
ONE BUSHEL APPLES
COMET
VICTORIA AUSTRALIA
GALAH
CITRUS PACK
GROWN PACKED NYAH VICTORIA AUSTRALIA
NAVELS
TASMANIA AUSTRALIA
BIDGEE
PENINSULA CO-OPERATIVE FRUIT GROWERS ASS. LIMITED
A.R. INNES AUSTRALIA
GROWN & PACKED BY A.R. INNES
CYGNET TASMANIA
TASMANIA
W.C. THOMAS & SONS PTY
TYNONG VICTORIA
SPECIAL PEARS
EXPORTED BY
Wm. H. PRICE LTD
SYDNEY, AUSTRALIA
PACKHAMS
NAVELS
AUSTRALIA
Bushel Apples
MAGPIE BRAND
R.P. BARNETT TASMANIA AUSTRALIA

The above illustration is evidence of the growing popularity of the Case End Label.

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CANNED FRUIT INDUSTRY.

An interesting and decidedly hopeful review of the Australian canned fruit position was recently given by Mr. A. W. Fairley, managing-director of the Shepparton Preserving Co., at a meeting of the Shepparton Irrigators' Association.

The pack for the past three seasons was (in dozens 30 oz. tins):—

	1929.	1930.	1931.
Apricots	474,960	554,507	182,996
Peaches	1,325,855	2,227,531	1,367,591
Pears..	572,148	787,791	205,733
	2,372,963	3,569,829	1,756,320

The exports to June 30 of this year were the equivalent (in 30 oz. tins) of 876,283 dozens. Another 350,000 doz. (30 oz. basis) would probably be shipped, making 1,226,283 doz. exported. The idea needed to be corrected that the pack was all sold of the 755,845 cases shipped to the United Kingdom to June 30 this year, 163,642 remained unsold: included in these figures were 13,127 cases of the 1930 pack still unsold in London, and there were approximately 60,000 to 70,000 cases still to be shipped.

As far as the Shepparton cannery was concerned, the position was satisfactory: stocks of both canned fruit and jam would be cleared and the cannery could handle the coming fruit crop with the exception of Pears: of the Pear crop approximately 1,500 tons could be canned. No indication of prices could be given, but some assistance should be available from the £315,000 grant from the sugar industry. On the company's figures to May 31, a further payment of £1 per ton had been paid to growers: a further payment was anticipated.

Australian Apple and Pear Export Council.

Successful Conference at Melbourne.

All States Represented and Many Important Decisions Made.

THE FIRST MEETING of the newly-formed Australian Apple and Pear Export Council was held on August 19 and 20, at the Commercial Travellers' Club, Melbourne. Delegates and visitors were in attendance as follows:—

Tasmania.—Messrs. B. J. Pearsall, W. H. Calvert, M.L.C., L. Taylor, E. Ross, J. P. Piggott, C. H. Cane, L. N. Smith.

Western Australia.—Messrs. F. E. S. Willmot, A. T. Booth, F. Simper.

Victoria.—Messrs. C. M. Griffeth, G. W. Brown, H. G. Colombie, J. B. Mills.

South Australia.—Messrs. J. B. Randell, H. J. Bishop.

New South Wales.—Messrs. H. V. Smith, E. Johns.

Queensland.—Mr. C. G. Parnell.

Officials.—Messrs. H. Thomson, H. Souter, H. Noel (Department of Markets), G. Quinn (South Australia), G. W. Wickens (W.A.), P. Thomas (Tas.), C. G. Savage and H. Broadfoot (N.S.W.), J. M. Ward and E. E. Meeking (Victoria).

In addition there was a large attendance of growers from various parts of Victoria.

Mr. H. G. Colombie was elected chairman of the Conference and R. E. Boardman, Secretary.

The Conference was officially opened by the Honorable Parker Moloney, M.P., Department of Markets, who was accompanied by Mr. E. J. Mulvaney, Secretary of Markets Department.

A hearty vote of thanks was accorded to the Minister on the motion of Messrs. Pearsall and Randell. The Minister was congratulated on having negotiated the Canadian Treaty.

The Commercial Travellers' Association was cordially thanked for use of Board Room and facilities afforded to delegates.

The minutes of the December Conference and the report of the Provisional Executive leading up to the present Conference were adopted.

Foundation members (those joining before March 31, 1931) were reported as follows:—The New South Wales Fruitgrowers' Federation, Tasmanian State Fruit Advisory Board, South Australian Fruit Marketing Association, West Australian Fruitgrowers' Association, West Australian Fruit Shippers' Association, Victorian Fruit Marketing Association.

The following application for membership were received and accepted as follows:—N.S.W. Chamber of Commerce (Fruit Merchants' Section), Committee of Direction of Fruit Marketing, Brisbane; Tasmanian Fruit Shipping Agents.

An application was also received from the Tasmanian Overseas Fruit Salesmen and Brokers' Representatives' Association. This was referred back to Tasmania under clause 3 (a) of the constitution, the matter of representation from Tasmanian exporting interests being deemed by the Council to be one for mutual arrangement in Tasmania.

Basis of Voting.

A list showing the quantities of Apples and Pears exported out of Australia from the several States during the three years ending June, 1931, was read and votes alloted as follows:—New South Wales, total for three years, 177,202 bushels, average 59,067 (one vote per section); Tasmania, total for three years, 6,100,935, average 2,033,645 (four votes per section); Western Australia, total for three years, 1,379,415, average 459,805 (one vote per section); Victoria, total for three years, 1,659,265, average 553,088 (two votes per section); South Australia, average for three years, 704,610, average 234,870 (one vote per section); Queensland, total for three years, 6,370, average 2,123 (one vote per section).

Uniform Nomenclature.

It was decided, on the motion of Messrs. Piggott and Cane, that a sub-committee be appointed to draw up a list of recommended names of varieties for export for submission to the Council. The Committee to consist of the following:—Messrs. W. Brunning, H. N. Wicks, W. H. Calvert, E. E. Pescott, together with the State Fruit Experts. It was further decided, on the motion of Messrs. Bishop and Calvert:

"That this Council requests the Minister for Markets to have the names of varieties as recommended by this Council incorporated in the export grading regulations, and that such varieties be not permitted to be exported except under these names."

At a later stage of the Conference, Mr. Brunning reported that whereas he had not got into touch with the full sub-committee, a list of names for adoption had been prepared.

The Council decided as follows:—

Apples.

Name to be Adopted.	Old Name.
Cleopatra	New York Pippin
London Pippin	Five Crown
Democrat	Tasma
Dunns	Munro's Favorite, Dunn's Seedling, Ohinemuri
Stewarts	Ballarat
Pomme de Neige	Fameuse
Stayman	Staymans Winesap
Granny Smith	
Gravenstein	Carpenter
Geeveston Fanny	Princess Mary
Ranelagh	
Statesman	Chandler
Scarlets	Scarlet Nonpariel
Adams Pearmain	
King Pippin	
Red Rome	Glengyle

Pears.

Williams (W.B.C.)	Bartlett and Prince William
Vicars	
Napoleon	

Forecasting Crops.

Several speakers stressed the advantages which would accrue from having accurate forecasts of the coming fruit crops in Australia. It was decided on the motion of Messrs. Ross and Smith:

"That forecasting figures for export be progressively reported by each State through this Council from mid-December onwards, the figures to be correlated and disseminated at the discretion of the Executive."

Freight on Export Fruit.

Mr. J. B. Mills reported the result of the negotiations with the Australian Overseas Transport Association, and urged that at future Conferences every fruit exporting State should be represented. There was a tendency for freights to be increased owing to shortage of incoming cargo, heavy duties and taxation here. Mr. Simper congratulated Mr. Mills on his able handling of the freight question when representing several States at the recent Conference; the inclusion of the clause relating to Force Majeure was wise . It was decided, on the motion of Messrs. Simper and Pearsall:

"That it be a recommendation at this Conference that each Apple exporting State be asked to send delegates to any Conference with the Steamship Companies regarding freight rates, the date of that meeting to be fixed for August."

Refrigeration and Transport.

Mr. G. Brown, Victoria, stated that a Refrigeration and Transport Committee had been formed by the Victorian Fruit Marketing Association, with the idea of obtaining accurate data, regarding the fruit from the growing stage through all the phases until stowage in the ship's holds. The information would embrace type of soil, temperature in picking, packing and placing in trucks, temperature of air and fruit during loading and stowage. The complete co-operation of the shipping companies had been assured. He suggested that other States set up similar Committees. Mr. Piggott emphasised the importance of humidity and ventilation as well as the temperature in ship's holds. Mr. Broadfoot told of the variation of temperatures in ship's hold. Pears should be so carried that they would stand up for at least two weeks after discharge. In the centre of stacks in some holds, the temperature actually rose instead of coming down. Mr. Calvert said that from the one ship fruit was discharged in various conditions from the several holds, yet this fruit had been picked in the same orchard from the same trees. It was clearly a question of faulty carriage.

It was decided, on the motion of Messrs. Griffeth and Piggott, that it be a recommendation to the State organisations:

"That Refrigeration and Transport Committees comprised of growers and shippers, be formed in each State to obtain all the information possible on this and similar subjects and submit same to this Council."

Stowage of Fruit for Export.

A paper writen by Mr. F. Cave on the subject of the stowage of export fruit was distributed, the necessity for a uniform case being emphasised.

An interesting discussion followed, Mr. Ward said there had been great improvement in Victoria, and he desired to congratulate the wharf laborers and stevedores. Mr. Thomas said that full time men had been appointed in Tasmania, one for the North and one for the South, to supervise loading operations and to draw up a report on the loading and stowage of fruit in each hold. This report was forwarded to the officer supervising the discharge in British ports. Information thus obtained was of importance in respect to claims. Mr. Noel stated that although walking planks were provided during loading operations in Tasmania, in his opinion the stowage was not yet satisfactory. Mr. Quinn told of the effectiveness of a State law in South Australia making rough

Australian Apple and Pear Export Council meeting at Board Room, Commercial Travellers' Association, Melbourne, August 19 and 20. On the right, standing, are Mr. E. J. Mulvaney, Secretary Market Department; Mr. H. G. Colombie, Chairman of the Conference, and Hon. Parker Moloney, Minister for Markets.

handling of fruit a punishable offence. Mr. Thomson supported Mr. Ward regarding the powers of inspectors to enter ships' holds and to report on the conditions of loading fruit. On the motion of Messrs. Booth and Simper, a resolution was carried as follows:

"That this Council requests the Overseas Shipping Representatives' Association to improve the conditions of loading and stowage of fruit for export."

At the request of the Council, Messrs. Booth and Simper prepared a detailed report, which was subsequently submitted to the Council as follows:—

Recommendations for the Stowage of Apples.

That in the lower holds, where cases are likely to be walked on, the tier of cases forming the floor must be stacked on end.

Horizontal dunnage not to be less than ¾ x ¾ between cases, and every four tiers dunnage not less than 2 x 2; also perpendicular dunnage to be used not less than ¾ x ¾ between each case.

Where conveyors are used, trestles are to be used instead of cases.

Sufficient walking planks to be used, lumpers and others to be compelled to use them.

Sufficient paliasse dunnage to be used on which to land all slings.

Dunnage between cases to be used so that the dunnage rests on the ends of cases and not on the side boards.

The foregoing to apply to lower holds loading 20,000 cases and over.

It was decided that a letter be sent to the O.S.R.A., same to be drafted by Messrs. Ross and Mills along the lines of the foregoing report and dealing with other subjects referred to the O.S.R.A. by the Council.

It was suggested that shipping companies be asked to set aside portion of their receipts from freights to carry out tests.

Pear Export.

The Secretary read a report prepared by a sub-committee of the Victorian Fruit Marketing Association on the subject of Pear export, as follows:—

All Pears should be pre-cooled—if naked, three days; if packed, for seven days.

After packing pre-cooled Pears, the cases should be kept in cool store for at least 24 hours, otherwise there is a certain amount of heating. We have made an attempt to get a declaration from growers that the fruit has been properly pre-cooled.

Pears should be sent from cool store to ship in iced trucks.

Fruit at the ship's side at loading should be about 40 deg. F.

The Inspectors of the Department of Agriculture are instructed not to pass for export any Pears which have not been pre-cooled. The temperature in the ship's holds should be maintained at 29-31 deg. Fahr.

In consideration of the shipping companies carrying Pears at a temperature of 29-31 deg., they stipulate that each shipper must sign an indemnity absolving them from claims arising from carrying at that temperature. One shipping company goes further in demanding an indemnity against claims if Pears arrive in bad condition from any cause whatsoever. We have taken strong objection to this clause and are hopeful of bringing this shipping company into line with the others in regard to the indemnity clause.

We make a practice of filling up the whole of a chamber at one port. Small chambers are recommended.

It is absolutely essential, in our opinion, that all Pears be pre-cooled before being packed, otherwise the pack becomes slack.

Fruit sent from country centres where no cool storage facilities exist should be sent naked to the cool store nearest the shipping point. After pre-cooling, the fruit should be packed for shipment.

We believe in the desirability of having only one uniform case as soon as practicable for the export of Pears in order to facilitate stowage and to secure reduction of freight.

However, we recommend that no more than three cases be used in the coming season, as follows:—Canadian bushel, dump bushel, long bushel. If using the long bushel it has been found valuable to use a double layer of lining paper when packing.

* * * * *

Mr. W. A. Thiele, Doncaster, detailed the advantages of the use of the long bushel case for the export of Pears.

The Fruit Case Question.

A letter from the Oversea Shipping Representatives' Association, dated August 19, was received, urging the adoption of a uniform type of case for export. Mr. Mills stated that too many cases were being now used. It was desirable there should be uniformity of cases in the individual States, but not necessarily uniformity throughout Australia. Mr. Thomson read a letter from the Franklin branch of the Tasmanian Agricultural Bureau (representing 93 per cent. of the growers, and producing 800,000 cases of Apples for export), recommending that the dump case be declared the standard for Tasmania. Mr. Ross produced a letter from Geeveston (with an export of 200,000 cases), in similar terms.

Mr. Calvert submitted specimen of Canadian type case made from hardwood. He stated this case was easier than the dump to pack into and more cases per day could be packed.

Mr. Thomas said that extensive experiments were being carried out in Tasmania with different types of cases, and reports were being received from their representatives in the United Kingdom.

Regarding Apple cases, the Council decided by vote to request that the following cases be eliminated as regards Apple export:—

Size 20 x 10 x 11¼; flat bushel, 26 x 14¼ x 6; ¾ flat, 24 x 11¾ x 6; case, 26 x 7⅛ x 6.

The following cases were thus recommended to be the only ones allowable for the export of Apples.

Dump bushel, 18 x 8-2/3 x 14¼; Canadian bushel, 18 x 10½ x 11½; half dump, 18 x 8-2/3 x 7⅛; half Canadian, 18 x 11½ x 5¼; dump tray and Canadian tray, any depth, provided such package shall contain only one layer of Apples.

Pears.—The following sized cases to be deleted: Case, 20 x 10 x 11⅛; case, ¾ flat, 24 x 11¾ x 6; half flat, 26 x 7⅛ x 6.

The following cases were thus recommended to be the only ones allowable for the export of Pears:—Dump bushel, 18 x 14¼ x 8-2/3; flat bushel, 26 x 14¼ x 6; Canadian bushel, 18 x 11½ x 10½; half dump, 18 x 8-2/3 x 7⅛; Canadian tray and dump tray, depth to suit any fruit. As regards Plums, the half flat, 26 x 7⅛ x 6 to be retained.

The case question was then referred to a sub-committee consisting of the following:—Messrs. Calvert, Bishop, Simper, Mills and Smith.

This sub-committee met and subsequently recommended size of containers for Apples and Pears as follows:—

South Australia.—Prepared to recommend that the case known as the Long Flat Bushel. 26in. long, 6in. wide, 14¼ in. deep; and the case known as the dump bushel 18 in.

Dinner tendered by the Victorian Fruit Marketing Association to delegates attending the Australian Apple and Pear Export Council conference

long, 8 2-3 in. wide, 14¼ in. deep inside be discarded for export. And that the case known as the Canadian standard 18 in. x 11½ in. wide, 10½ in. deep, be used for Apples; and for Pears that containers be 18 in. long, 11½ in. wide, with depths to suit sizes of fruits with a maximum depth of 8in.

New South Wales.—Prepared to recommend same as South Australia.

Western Australia.—Prepared to recommend use of dump case type only, as follows:—18 in. long, 8 2-3 in. wide, 14¼ in. deep; half-dump case, 18 in. long, 8 2-3 in. wide, 7⅛ in. deep; tray, 18 in. long, 14¼ in. wide, depth to suit sizes of fruit.

Tasmania.—Prepared to recommend use of dump case type 18 in long, 8 2-3 in. wide, 14¼ in. deep; half-dump 18 in. long, 8 2-3 in. wide, 7⅛ in. deep; trays, 18 in long, 14¼ in. wide, cut to depth to suit sizes of fruit; Canadian standard type of case, measuring 18 in. long, 11½ in. wide by 10½ in. deep, or 18 in. long x 11½ in. wide x 8 in. deep, or trays 18 in. long x 11½ in. wide, cut to depth to suit sizes of fruit with a maximum depth of 8 in.

Victoria.—Same as Tasmania, excepting that the long flat bushel case 26 in. long, 6 in. wide, 14¼ in. deep be retained for export of Pears.

Summary.

It was recommended generally that if Apples are exported in containers of the tray type, that the Apples shall be packed one layer deep only. Mainly for the purpose of uniform stowage, all States except Victoria recommended disuse of long flat bushel type of case. As South Australia and New South Wales recommends disuse of all types of cases except the Canadian standard with modifications in depths to suit packing and shipment of Pears. Western Australia recommends disuse of all cases except the dump type, with modified depth to suit packing and shipment of Pears. Victoria and Tasmania recommend use of both Canadian standard and dump types with modifications of depth to suit packing and shipment of Pears.

Note.—All the measurements mentioned are inside measurements.

The report was adopted, on the motion of Messrs. Brown and Randell, with the recommendation that the States concerned adopt the types of cases as set out.

Co-ordinated Shipments.

Mr. Randell (South Australia) introduced the subject of co-ordination of States to secure equitable space and properly spaced arrivals at destination. It was admitted that there were difficulties in the way of spaced arrivals at destination owing to the fact that some ships travelled via the Cape and others via the Suez Canal. However, an effort should be made to avoid the serious gluts which followed from ships arriving simultaneously.

With regard to adequate space for each State, the opinion was expressed that the forecasting of crops would be helpful. It was finally decided, on the motion of Messrs. Randell and Bishop—

"That this Council endeavour to arrange with shipping companies for an equitable allocation of space (with equitable sailing dates) pro rata between the exporting States and a regular and orderly arrival of boats at the ports of destination."

Australian Representative for England.

A letter was received from the Markets Department renewing the offer of the Empire Marketing Board to pay the expenses of a suitable representative to visit England connected with fruit matters. First class return fare was offered, plus 5/- per day on board ship and £1 per day while in England. Appreciation was expressed for this offer, which was referred to the Executive for consideration.

During the discussion it was suggested that better results would probably accrue if a delegation of three were sent, a grower, a shipper and a departmental expert.

Considerable discussion followed the tabling of a resolution by Mr. H. V. Smith as follows:—"That a suitable officer be detailed by the Commonwealth to inspect and report on shipments of fruit from Australia to the United Kingdom." Mr. H. Broadfoot directed attention to the fact that considerable losses were incurred through factors which could be remedied. He mentioned the system of battening, fans, grids, temperatures, also co-operation with the Cambridge Temperature Station and the Empire

Marketing Board. After discussion, from which much helpful information was given, the motion was withdrawn.

Formation of Overseas Committee.

It was decided, on the motion of Messrs. Piggott and Booth—

"That this Council confirms the principle of having a Committee of selling agents and distributors in the United Kingdom."

Mr. Piggott moved—

"That this Council directs the Executive to investigate a selected committee of selling agents and distributors approved by the several States to handle Australian fruit on overseas markets."

Mr. Piggott said the idea was to select firms of undoubted financial stability. At the present time the fruit was being scattered too widely and the sales should be concentrated into fewer hands. Mr. Pearsall seconded the motion, which was carried.

Fruit Export Regulations.

Mr. H. V. Smith advocated an alteration to the grading regulations. At the present time the "special" grade was rarely used and should be dispensed with. The "standard" grade was a blend; differences in grades should be clear cut and definite. The present grading regulations were the highest in the world—on paper. The changes he advocated would bring Australian grades into line with those of the Pacific North-West of U.S.A. Moved—

"That the tolerance in 'special' grade be increased to 10 per cent., and that the 'standard' grade be allowed to carry 10 per cent. of fruit with the maximum blemish of ¼ inch."

The motion in this connection lapsed for want of a seconder.

Mr. Wickens (W.A.) urged the inclusion of color requirements in the standard grade. The words "of good color for the variety" would apply to the normal coloring of varieties in individual States. Mr. Booth moved—

"That this Council recommend to the Minister for Customs that in regulation 48, clause c, the following words be added:—'The fruit shall be of good color for the variety.'" Mr. Simper seconded. After vigorous discussion, the motion was lost. Mr. Willmot (W.A.) then moved—

"That the whole of the grading regulations remain as printed."

Mr. Ross seconded. Carried.

Uniform Inspection.

Several delegates quoted instances where grading regulations were not being administered uniformly.

Regarding what might be termed "normally small" Apples for the variety, Mr. Wickens (W.A.) contended that 2 inch mid-season Jonathans, highly colored, "firm as Rokewoods" should be included under "standard" grade and not be marked down to "plain." These Apples were not the early and immature Jonathans, but those which developed later in the season. He quoted figures showing that such Apples loaded about mid-April realised surprisingly good prices. Mr. Randell stated that he hoped the regulations would be interpreted similarly in South Australia.

Amendments to Constitution.

The amended constitution (embodying the recommendations from the several States) was considered in detail and adopted with slight alterations. The proposed clause 5 (c) reading as follows:—"The Executive Committee shall not have power to carry out any decision except with the consent of the Council," was deleted. The constitution of the Executive was altered to include two representatives from each section from any State which exported 1½ million bushels or over of Apples and Pears (on a three-year average). The original voting power, however, as set out in clause 7 (a) remained constant. Clause 8 (a) was altered to provide that the Executive Committee should meet at the call of the President or at the request of three States. Executive members were empowered to send substitutes if desired, a quorum to consist of one representative from each of the four States.

The Executive Committee was then appointed as follows:—

W.A.: Messrs. Booth and Simper; Tasmania: Messrs. Pearsall, Calvert, Ross and Piggott; South Australia: Messrs. Randell and Bishop; New South Wales: Messrs. Smith and Johns; Victoria: Messrs. Griffeth and Mills; Queensland: Mr. Parnell.

(The grower delegates from New South Wales, Queensland and Tasmania to be subject to endorsement by their Associations.)

President.—Mr. J. B. Mills was elected unanimously.

Vice-Presidents.—Messrs. Pearsall and Randell were nominated, and after a ballot Mr. Pearsall was elected.

Decided that the next Council meeting be held in Melbourne.

Hail Insurance.

Mr. Brown detailed the activities in Victoria to secure hail insurance for growers. This was now being dealt with as an individual district, the price being 69/- per cent. for six months, 60/- for four months, down to 36/- for one month. Mr. Booth (W.A.) said that insurances could be effected on fruit against hail in Western Australia for three months at 45/- per cent., the fruit being insured for 5/- per case on the tree. The insurance was usually effected from December to March.

Advertising Fruit Overseas.

Mr. Piggott directed attention to what were deemed to be weaknesses in the present system for advertising Australian fruit in Great Britain. At present growers paid ½d. per case, brokers ½d. per case, and this had been subsidised by the Commonwealth £1 per £1 up to £5,000. The last-mentioned was now being reduced. The system of collection, however, was not uniform, and a considerable quantity of fruit, particularly f.o.b. sales, did not pay the levy. He suggested methods by which retailers, who were in direct contact with the consumers, could bring home to the consumer the fact that it was Australian fruit that was being handled.

Mr. Thomson gave details of the contribution by the growers, brokers and the Government, and spoke highly of Mr. Hyland, Australian Director of Publicity in U.K.

Mr. Colombie stated that in 1923 the brokers had commenced a general advertising campaign and had spent £40,000 to £50,000 per annum in advertising fruit generally, the idea being to teach the people to "eat more fruit." Continuing, Mr. Colombie gave details of the expenditure on Australian publicity both in England and on the Continent. It had been proved beyond doubt that the fruit advertising campaign had materially assisted in disposing of the ever-increasing quantities of fruit now being sent to the United Kingdom. It has been embarrassing to the trade when a section in Tasmania had withdrawn from the advertising fund, which had been followed by other withdrawals, and growers were in danger of losing both the ½d. per case contributed by the brokers, also the Government grant.

On the motion of Messrs. Piggott and Calvert, the subject was referred to the Executive.

German Duty.

On the motion of Messrs. Ross and Pearsall, it was unanimously decided—

"That the Australian Apple and Pear Export Council again urges the Commonwealth to make arrangements to remove the serious disability the Australian Apple and Pear growers are under in respect of the German Customs duty, in comparison with supplies from other sources. Failing such an arrangement, that the growers be compensated by the Commonwealth Government for the difference in duty incurred.

Trade with the East.

Interesting information concerning developments in trade with the East were given by Mr. Parnell (Queensland). Mr. Piggott stated that one of the great difficulties in developing trade was the shortage of refrigerated space.

On the motion of Messrs. Thomas and Booth, a very hearty vote of thanks was accorded to the Chairman and Secretary.

On the evening of Wednesday, August 19, the Victorian Fruit Marketing Association entertained delegates and visitors at dinner at the Oriental Hotel. Mr. H. G. Colombie presided. The function was greatly enjoyed.

* * * * *

On the afternoon of Thursday, October 20, a session was devoted to research matters. Dr. A. C. D. Rivett, Chief Executive Officer, Council for Scientific and Industrial Research, stressed the importance of the scientific work being conducted. Dr. B. T. Dickson, who gave a detailed account of the investigation work being conducted by Mr. W. M. Carne regarding bitter pit, biennial cropping, etc. A very interesting discussion ensued, in which valuable information was given by Mr. H. N. Wicks (South Australia), Messrs. Wickens, Willmot, J. W. Bailey, Brown, and others, the scientists being heartily thanked, on the motion of Messrs. Pearsall and Wicks.

Black Spot.

Special Warning for Vignerons. All Fruitgrowers Must be Watchful.

OWING TO ABNORMAL WET weather, growers must be on the lookout to prevent black spot.

Remember it is the preventive treatment which demands special attention.

Preventive measures for vignerons include swabbing and spraying.

* * * *

Swab with acid iron solution in early spring before vines show movement. Spray with Bordeaux or Burgundy mixture (alkaline), when buds are bursting. Follow with Bordeaux or Burgundy (neutral), giving applications according to weather conditions.

* * * * *

Burgundy Mixture.

No. 1.—A neutral spray. Copper sulphate (bluestone), 7 lbs.; washing soda, 10 lbs.; or soda ash, 3½ lbs.; water, 50 galls. (These quantities are a guide only as to when testing should commence.)

Prepare stock solution by dissolving 1 lb. bluestone per gallon of water. Suspend bluestone in hessian bag just under surface of water for preparation overnight. (For immediate use dissolve bluestone in hot water.)

Dissolve 1 lb. washing soda in 1 gall. water; (if soda ash is used, ½ lb. to the gallon).

Two casks, kerosene tins, a sieve, and a broom handle for stirring are required; also a strainer for liquids as they pass into the spray barrel.

Mixing.—After stirring, pour 6¼ galls. bluestone solution into spray barrel, and make up to 20 galls. with water; add sufficient soda solution to give phenolphthalein test; add ¾ gall. bluestone solution, and make up to 50 galls. water. Test with phenolphthalein paper; stop adding soda solution as soon as test paper turns faintly pink when placed in mixture.

No. 2.—Alkaline Spray (for use in spring and summer for Vine Black Spot and Downy Mildew to follow No. 1 spray.) Formula:—Copper sulphate, 7 lbs.; washing soda, 11 lbs., or soda ash, 4 lbs.; resinous soap, ¼ lb.; or casein, 5 oz.; water, 50 galls. Cut the soap into small pieces, and boil in 1 gall. water: use when warm.

Mixing.—Same as for No. 1, except that 7 galls. bluestone are used to commence, and no further addition subsequently.

As Burgundy mixture may cause slight scorching of leaves, Bordeaux (copper-lime) is preferred, but this advantage can only be claimed when good fresh lumpy lime is used. Poor quality lime is unsatisfactory.

Bordeaux Mixture.

For the standard Bordeaux use 6 lbs. bluestone, 4 lbs. fresh lumpy lime, 50 galls. water. Prepare as No. 1, except re lime.

Preparation of Lime.—Place 15 to 20 lbs. quicklime in cask, and slake by adding small quantities of water at a time. When fully slaked, fill cask with water and stir until the thin milk is obtained. Add this milk of lime to bluestone solution until phenolphthalein test is obtained. Prevent air slaking of lime. Use airtight tins, or slake in large quantities, keeping it covered with water to prevent air slaking: it can then be used as required.

Another Method.—Dissolve bluestone in one vessel (owing to corrosive action on metal, use wooden vessels). Slake lime (or mix soda) with water in another vessel. Usually two 50 gall. barrels are used; set on stand high enough to allow the spray cart to be backed under.

When ready, place spray tank below barrels, and run the two solutions in together. Strain mixture as it enters spray tank, and stir well. For an alkaline spray, add soda solution to the bluestone, until phenolphthalein paper shows pink tinge. By adding a small quantity of bluestone solution to an alkaline mixture, a neutral spray is obtained, while a greater quantity gives an acid mixture.

Acid, Neutral, and Alkaline Mixtures.

Use alkaline spray for vine black spot and downy mildew. Acid and neutral mixtures are quicker acting but are too easily washed off by rain. As the alkaline sprays release sufficient copper for fungicidal action, there is no advantage in a quicker release. Spraying before rains —before the appearance of the disease—is the keynote of successful work in the vineyard.

For Swabbing Vines.—For black spot of the vine use acid iron solution in winter. Swabbing, though slower, is more effective than spraying. Formula, strong commercial sulphuric acid, 7 lbs. (specific gravity at or about 1,838); sulphate of iron, 20 lbs.; water, 10 galls. Use a wooden vessel for mixing; a glass or earthenware vessel for measuring strong acid; a vessel for carrying the solution for swabbing. Wooden and tin containers are used: the latter have a limited life.

Making of Cider in New Zealand.

GOVERNOR-GENERAL SEES POSSIBILITIES.

(From Our New Zealand Correspondent.)

LORD BLEDISLOE, who succeeded Sir William Fergusson as our Governor-General, is eminently practical, as becomes one of England's leading farmers. He is investigating our industries and generally has a word of sage advice to offer.

He is a staunch advocate of cider as will be seen from the following remarks he addressed to a meeting of New Zealand fruitgrowers: "In view of the great development and improvement of cider-making in England in recent years, and the extent to which this wholesome and refreshing beverage (varying in strength from that of ginger beer to that of 7 per cent. alcohol), has since the war displaced French and German wines in London clubs, I cannot help wondering why it is not more largely manufactured in this country, if not on a factory scale (conducted as a useful outlet for 'bitter sweet' apples), at least as a sideline, or ancillary industry to that of fruit-growing."

In view of the number of apples grown in New Zealand and of the very strict grading, or sorting, required to pass the fruit suitable for export, it seems strange that more is not heard of local enterprise being shown in the cider industry, for although reject apples, or apples unfit for export, have several uses, such as supplying local market, dried fruit industry, jam or jelly manufacture, there must remain a very large number with little or no commercial value, which could be turned into excellent cider, so creating a primary industry, which would serve to ease the unemployment question, and be beneficial to the country in general.

Last year the total number of apples exported from New Zealand was 1,328,000 cases, and it is fairly safe to say that even if the same number were required for local markets and other uses, it would still leave a large quantity suitable for the manufacture of cider, saleable at a reasonable figure and at the same time utilising fruit grown in the country, which otherwise might be wasted.

In Nelson, Canterbury, and Hawke's Bay, several good brands of cider are manufactured on a small scale, and a most excellent cider comparing very favorably with real Devonshire is also made in Marlborough, but apart from this little else seems to be done to enable it to be available in sufficient quantity and at such a price as to be a national beverage of this Dominion, so supplying a wholesome and health-giving drink, which is strongly recommended as a cure for rheumatism, sleeplessness, preservation of the teeth, and other most needful uses.

AMERICAN APPLES.

Long Season in 1931 in European Markets.

Eleven Months of Effective Apple Supplies.

That American Apples enjoy a long season in European markets was noticeable this year.

Hamburg reported sales of American Winesaps on July 2 (although the last major sale was on June 11). Then new season's Californian Gravensteins were reported as due to arrive in early August.

GREAT BRITAIN'S FRUIT CONSUMPTION.

Trade Worth £31,000,000 Annually.

Oranges Head the List of Importations.

AUSTRALIA as a fruit producing country, states Mr. Parker Moloney, Minister for Markets, is vitally interested in the information just to hand of the Empire Marketing Board's review on the "Fruit Supplies in 1930."

The value of fruit as an article of diet is becoming more widely recognised as statistics show the increased imports by Great Britain, Germany, Sweden, Norway and Denmark. Of particular interest is the analysis of the position in Great Britain, Australia's principal market, wherein it is shown that the United Kingdom is now consuming 83 lbs. of fruit per head a year, as compared with 70 lbs. in 1924. The average consumption of Apples is larger than any other fruit, namely 24½ lbs. per head—Oranges follow a close second.

Oranges head the list of imports, and once the problem of carriage is placed on a more satisfactory basis, Australia should command a share of this valuable trade.

Large quantities of Bananas are also consumed in the British Isles, and the British West Indies, which recently soundly organised this trade on a co-operative basis, is the largest supplier.

The fruit bill of Great Britain is estimated at £31,000,000 annually, and it is gratifying to know that ever increasing supplies of high quality fruit from Empire countries are reaching that market.

Grapefruit, which is not produced to any great extent in Australia, has met with tremendous popularity, the quantity sold last year being seven times that in 1924. In view also of the value and extent of the market for this product, particularly in Canada, Australia may be warranted in seriously considering the advisability of paying some attention to the production of increased quantities of the type of Grapefruit required. Canada's imports for the twelve months ending March, 1930, were 26,000,000 lbs., valued at £252,000, practically the whole of which she imported from the United States of America.

BONDING OF CONCRETE.

IT IS OFTEN NECESSARY to place new concrete on top of concrete that has set hard, and it is important that the process of "bonding" shall be effective, particularly when constructing water tanks, silos, and the like, where a water-tight junction is essential.

The top of the old concrete should be left fairly smooth; then immediately before placing on top of it the new concrete it should be swept clean, flushed at intervals with water, and spread with a half-inch thick layer of mortar consisting of one part cement to two parts sand. This mortar will lie evenly on the old work, and the stones of the new concrete (which naturally gravitate downward) will bed down into it. If the surface of the old work is left rough and only a coat of slurry spread over it, the stones or metal of the old and new work will meet without any matrix or mortar between to bond them together, and a weak and leaky junction is the result.

MANCHESTER AS A MARKET.

We have received from the Manchester Fruit Marketing Information Bureau a copy of their recent interesting folder, telling of the value of Manchester as a market, also plan of the Manchester Ship Canal and Docks.

The Stationary Spray Plant.

Success in New Zealand and Tasmania.

Cost of Spraying Halved, and Trees Can be Sprayed Irrespective of the Condition of the Ground.

Detailed Information of Interest to Growers.

STATIONARY SPRAY PLANTS have proved successful in New Zealand and Tasmania. Also it is noted that this system is largely in vogue at Wenatchee and other important Apple centres on the U.S.A. Pacific Coast.

Following on some recent articles in the "Fruit World" on this subject the Editor is now in receipt of letters asking for added information.

* * * * *

SOME INTERESTING DETAILS relating to the operation of electrically-driven central spraying plants in Tasmania were recently supplied by Mr. Wilkinson, an officer of the State Electricity Commission of Victoria.

Mr. Wilkinson stated that the fixed spraying plant with pipe reticulation throughout the orchard, is giving great satisfaction to the users. Two seasons ago, only two plants were in operation, last season four more went in, and the suppliers of the equipment—two of the leading machinery firms in Hobart—now report that many enquiries are being received from growers who have been impressed with the advantages being derived by the pioneers of this new method.

Pump house and temporary service,—at Mr. Freeman's orchard near Franklin, Tas.

All the pumping plants yet installed are practically identical. In each case a 5 h.p. electric motor is coupled through chain drive to a Myers quadruplex plunger pump, thre latter having an output of approximately 12 gallons per minute at pressures up to 400 lb. per sq. inch. A special type of pressure releaser unloads the motor when the hoses are not operating.

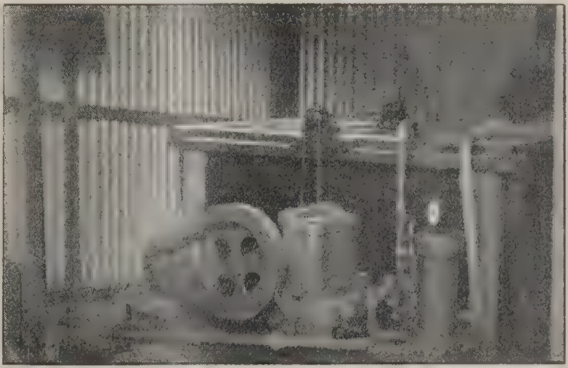
Vats, usually of 200 gallons each, are constructed either of wood or concrete, though the latter is regarded as more durable, and is certainly no more expensive. These vats are in pairs, so that solution can be made up in one while the other is in operation, and there is a general tendency to increase the size, even to the extent of providing sufficient capacity for a half-day's spraying without wasting time mixing solution at the pumping station.

The absence of any necessity for attention at the plant, while there is solution in the tanks, enables the whole of the operator's time to be devoted to actual spraying. It is estimated that as compared with portable pump methods from two to four times the number of trees can be sprayed in a given time.

The location of the plant is determined by the available water supply, and not by considerations of level. In some cases pumping is done uphill and some down, but on a flow and return system the pressure is equal independent of level. The question of whether a complete circulatory principle or a non-return system is the best is a matter of individual judgment, and the layout and contours of the orchard. Mr. Barnett, of Franklin, favors the former, and a description of his plant may be of interest.

Mr. Barnett's Plant at Franklin, Tas.

The area of the orchard is about 18 acres, the whole of which is reticulated with piping fed from the pumping plant situated at the lowest corner near the road. A Myers four cylinder pump driven by a 5 h.p. "Parkinson" motor circulates about 12 gallons of solution per minute at a pressure of 300 lbs. per sq. inch. Ordinary galvanised water piping is used for reticulation, the size being ¾ in. diameter on the outward run to the highest point of the orchard, and ½ in. diameter on the return.



Stationary spray plant, electrically driven on Mr. Freeman's orchard.

Ordinary bib taps for screwed hose connections are spaced along the pipe 80 ft. apart, and unions inserted every 200 ft. enable any section of piping to be disconnected in case of necessity. The pipe line takes such a circuit that five or six rows of trees on either side can be reached by a 120 ft. hose, and the intervals between parallel pipes being about 10 or 12 rows, every tree in the orchard can be reached. It may be mentioned that water piping and bib taps are not intended to be used on pressures in excess of 200 lbs., but Mr. Barnett's system was tested to 400 lbs. without any fault showing.

Two spray guns and one rod are used on 120 ft. hoses, and a system such as that shown diagramatically in the "Fruit World" of May 1, 1930, is adopted to reach every tree without confusion. The hose is ½ in. internal diameter, though ⅜ in. would be entirely suitable and lighter to handle if it can be obtained.

The pipe line has been run through the lower limbs of the trees, a clearance of about 6 ft. 6 ins. being allowed for horsework beneath. No stakes or posts were required, nor was any fastening provided to retain the piping in place. It simply rests on the most convenient limbs, and is free to expand or contract or allow free movement of the trees in the wind. It is easily within reach for fixing the hoses, and should leaks develop they can be noted and remedied with the least trouble. The total cost of the plant and reticulation was £300.

On an orchard not far from Mr. Barnett's there is an example of a system laid underground; in fact it was the first fixed plant in the district. The fact that each of the more recent users has adopted the overhead system seems to indicate that the expense of burying is not justified.

Mr. Kile, at Castle Forbes Bay, Tas.
has now had several years' experience with his plant, and as reported previously in the "Fruit World," speaks very highly of the economy of the idea. He adopted the complete circulation system, but has subdivided the circuits into three, either of which may be used independently. In the case of Mr. Kile's plant, it was noticed that the agitator paddle in the tank was driven through a stuffing box in the walls. The more modern practice is to drive the paddle or propellor from an overhead shaft, and thus avoid leakage troubles.

Mr. Eaves, at Franklin,
adopted the non-return system in spite of the fact that he pumps uphill almost 400 ft. All the piping is ½ in., of which some 4,300 ft. were used. The motor and pump (similar to that already described) cost approximately £90, but particulars of the piping cost had not been kept.

It is safe to predict a general extension of the method in Tasmania, where the plants in use are an object lesson to other growers.

The utility, however, of the idea would be no less apparent for application in Victoria and the other States, and it is surprising that so far it has not been introduced.

Two obvious advantages
have been demonstrated—the cost of spraying even taking the capital charges into consideration can be halved, and the trees can be sprayed at the critical time irrespective of the condition of the ground. Incidental advantages are the better spraying attainable with the higher pressures, the avoidance of damage to trees and crop, and the much reduced maintenance costs as compared to those of portable plants. In the principal Apple growing States of America, the latter type of plant is fast disappearing.

Mr. Wilkinson stated that should any grower desire any advice on the selection of plant and installation, the State Electricity Commission, 22 William-street, Melbourne, will have pleasure in providing expert assistance as part of its service facilities for consumers.

SUGAR EMBARGO.

Is Agreement Legal?

Legal Action Contemplated.

Because the Sugar Agreement is believed to be illegal, Committees are at work in several Australian States with the object of having a test case brought before the High Court.

The Strawberry Bed.

This is Cleaning-up Time.

Manuring and Pest Control.

THE CLEANING-UP of the Strawberry bed and removal of all dead leaves, weeds, and rubbish preparatory to spring is an important means of preventing the carry-over of disease and insect pests, but the best time for the operation depends a little upon the district in which the grower is situated. In some of our coastal districts growers are inclined to delay this operation in order to keep the plants more dormant during the winter. It has been found in some localities that if the beds are kept clean during the winter or are cleaned too early they are more liable to be stimulated into active growth. The weather is not warm enough to allow this crop to mature, and it so exhausts the plants that they do not produce their normal spring crop. There are, on the other hand, certain localities on the coast (those under the influence of the sea) mild enough for the crop which sets in the latter part of the winter to come to satisfactory fruition.

A good dressing of fertiliser should be applied at the time of the above-mentioned operation and dug in with a fork or hoe. Either blood and bone (10 lb. to the rod) or a mixture of blood and bone (8 lb.) and sulphate of ammonia (1 lb.) may be used. As an alternative to fertiliser a good dressing of farmyard manure may be applied.

Now is also a good time to take any necessary measures against red spider. This small mite is a common source of trouble in Strawberry gardens. The under-surface of the leaves may become heavily infested, and on a badly infested leaf mites in all stages of development may be seen crawling about or feeding under the shelter of a very fine web which they spin over the surface of the leaf. The mites damage the leaves by sucking up the sap, and when they are numerous the infested leaves become greyish-white in color, and the vitality of the plant is seriously impaired.

Once the plants have commenced to bear it is largely impossible to control the mites without affecting the fruit with the spray, and every effort should therefore be made to control the mites before the fruiting period begins. The practice of burning-off is a valuable method for destroying mites and insects that may be sheltering on the plants. A number of insecticides, such as lime-sulphur and flowers of sulphur or other finely divided sulphurs now obtainable, can be recommended for the control of mites before the plants are bearing fruit. The lime-sulphur is applied as a spray at the rate of 1 gallon to 60 gallons of water, and a thorough application is necessary for the best results. The sulphur dusts are best applied with a knapsack duster and give excellent control. The powder should be blown well into the foliage of the plants.

The chief consideration in the control of mites is the early application of the spray or dusts, as little can be done when the mites become very numerous or when the plants have reached the fruiting stage.

FLOODS AT RENMARK.

Severe floods at Renmark and other River Murray districts have caused heavy losses to citrus growers.

How Foliage Affects Fruit Crops.

The Relation of Foliage to Fruit Size and Quality in Apples and Pears.

(Continued from p. 401, July "Fruit World.")

Growth of Pears with Different Leaf Areas.

Data for three varieties of Pears grown with various amounts of foliage are shown in Figures 5 to 7, inclusive. Bartlett Pears were grown as previously outlined with 10, 20, 30, 40, and 60 leaves per fruit. A study of the curves showing the growth rate of fruit with various leaf areas throughout the season shows that in general the response with Pears was similar to that with Apples.

With Bartletts it is apparent that the maximum growth rate was not obtained until about the middle of July. Fruit of this variety grew more rapidly during the last 15 days than at any other time during the season. It was growing at its maximum rate at the time of commercial harvesting, August 12. Commercially, Bartlett Pears are picked while still in a hard green condition, and apparently while still making growth as rapidly as at any time during the season.

Similarly, with the Anjou variety growth rate did not obtain the maximum until the middle of July. From that date until about the end of the season, growth was fairly uniform. At the date of picking, size increase was continuing about as rapidly as at any previous time. Growth rate of Anjou at the time of harvest was at the rate of more than one per cent. in volume per day. This continued increase in size of individual fruits is important from the standpoint of tonnage produced. Picking the Anjou ten days before the proper season may result in a ten to fifteen per cent. decrease in tonnage.

With Winter Nelis, a somewhat similar growth curve resulted. The period of most rapid growth with this variety was between July 28 and September 12; after the middle of September, growth went on at a slightly reduced rate until the date of picking, October 10. (July, August and September in U.S.A. would be January, February and March in Southern Hemisphere.)

With Pears, response to various leaf areas was similar to that with Apples. For Bartlett Pears grown with ten leaves per fruit, the fruit averaged slightly larger than 200 per box; with 20 leaves, on the other hand, fruit averaged around 135 per box; with 30 leaves, fruit averaged around 110 per box; and with 40 leaves, fruit averaged slightly larger than 100 per box. Thus with Bartletts, as with most other varieties, 20 leaves were necessary to obtain fair commercial size in the fruit, while 30 leaves were necessary to obtain the most desirable cannery size.

The results with Anjou were similar. With 15 leaves, the smallest number used for this variety, fruit averaged about 163 per box; and with 25 leaves, fruit averaged about 115 per box. Sixty leaves per fruit were necessary with Anjou to get fruit packing less than 80 per box.

With Winter Nelis, a variety which tends to be much smaller, the same principle prevailed. with 10 leaves, the fruit averaged approximately 236 per box; with 20 leaves the fruit averaged about 180, while with 30 leaves, the fruit averaged around 160 per box. Fruit grown with 40

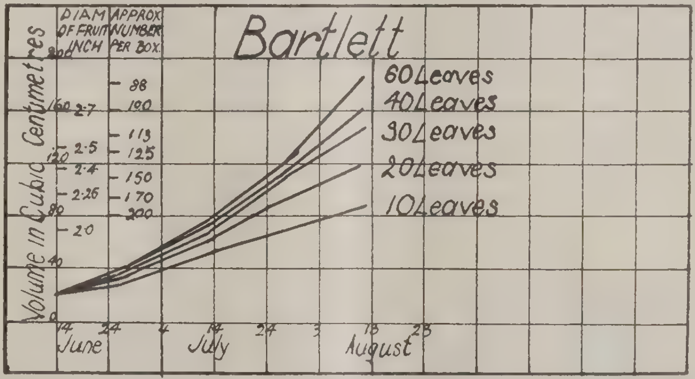


Fig. 5. Growth of Bartlett Pears on ringed branches with varying numbers of leaves per fruit, Wenatchee, Wash., 1929.

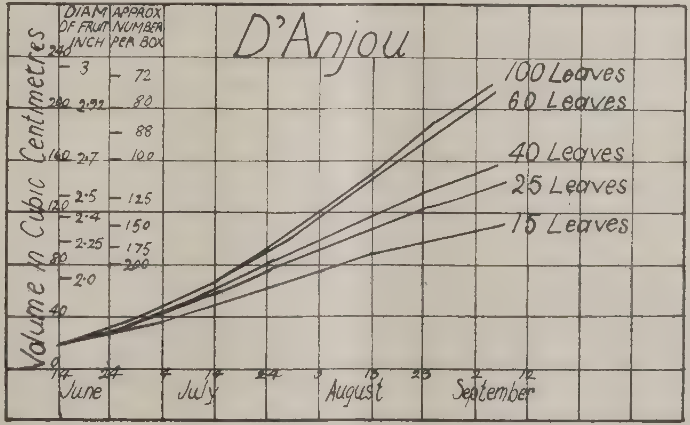


Fig. 6. Growth of D'Anjou Pears on ringed branches with varying numbers of leaves per fruit, Wenatchee, Wash., 1929.

Note.—June, July, August and September in U.S.A. corresponds with December, January, February and March in the Southern Hemisphere leaves averaged about 135 per box. Approximately **twice the number of leaves** was needed to obtain Winter Nelis fruit of a given size as was needed for Bartlett fruit of similar size. For example, Bartlett Pears grown with 10 leaves were about the same size as Winter Nelis grown with 20, while Bartlett Pears grown with 20 leaves were about the same size as Winter Nelis grown with 40 leaves.

Table 2.—Summary of Size and Composition of Pears Grown on Ringed Branches with Various Numbers of Leaves.

Variety.	Number leaves per fruit.	Average area of leaves, sq. in.	Number Pears.	Size,—end of season.			Chemical analyses of fruit—Per cent. fresh-weight.				
				Volume c. c.	Diameter inches.	Approx. number per box.	Reducing Sugar.	Total Sugar.	Dry Matter.	Acid c.c. N/10 NaOH.	Nitrogen.
Bartlett	10	—	22	87.4	2.15	183	4.03	5.56	14.12	1.70	.071
"	20	—	22	120.7	2.42	135	5.59	6.99	15.09	2.60	.036
"	30	—	18	148.7	2.60	110	6.46	7.55	15.36	2.65	.043
"	40	—	13	164.3	2.72	98	6.58	8.18	17.96	2.90	.038
"	60	—	12	186.8	2.85	85	5.99	7.80	18.14	3.00	.043
D'Anjou	15	—	15	107.6	2.30	150	4.00	5.24	13.21	1.20	.058
"	25	—	30	143.6	2.60	113	4.48	5.49	14.31	1.90	.054
"	40	—	18	155.5	2.65	103	4.75	5.79	15.26	2.15	.053
"	60	—	16	215.4	2.95	75	6.12	8.10	19.22	3.10	.032
"	100	—	23	223.2	2.98	72	4.79	6.50	17.99	3.10	.038
Winter Nelis	10	2.03	20	65.3	2.00	225	8.10	10.80	17.23	1.00	.044
" "	20	1.92	18	89.2	2.15	180	8.94	12.10	19.53	1.20	.043
" "	30	2.10	20	102.6	2.30	160	9.42	14.00	22.27	1.55	.039
" "	40	2.16	20	118.9	2.40	135	9.50	14.25	21.67	1.50	.043
" "	50	2.61	23	113.5	2.37	140	9.90	15.20	22.25	1.70	.047

Table 2 presents a summary of the size and chemical composition of the Pears grown on ringed branches with various numbers of leaves. This table shows that, as in the case of Apples, there was an increase in reducing sugar, in total sugar, and in dry material in the fruit grown with larger leaf areas. There was also an increase in the titratable acidity in fruit grown with larger leaf areas. Thus, as in the case with Apples, the fruit grown with larger leaf area was not only larger, but was also higher in sugar content, higher in acidity, and on the whole had a better and more characteristic flavor than fruit grown with a reduced amount of foliage.

The sugar content of the Winter Nelis Pears with the different leaf areas was almost double that of the other varieties. Total dry material was also higher in Winter Nelis. This is interesting in view of the fact that approximately double the leaf area was required with this variety to give fruit of similar size as compared with that required for Bartlett and Anjou.

Relation of Growth on Ringed and Unringed Branches.

The tests here presented were with fruit grown on branches from which a ring of bark had been removed at the time of starting the experiments. Apparently the removal of this ring of bark effectively prevented movement of food materials formed in the leaves, either into or away from these branches. Hence, there was no opportunity for the fruit to draw materials from leaves other than those on the branches under test. Also, the food materials formed in the leaves on these branches were confined in the branches.

Under conditions in a normal unringed tree, there is apparently a movement of food materials from the leaves along the branches and into the trunk and roots of the tree. Unpublished data by Haller and Magness indicate that fruits may draw on leaves located at considerable distances away in case materials from nearby leaves are not available. Consequently, in a normal tree it is probable that there is a considerable transfer of materials along the branches and from the branches to the main body of the tree.

Not all of the food materials formed in the leaves are utilised in the growth and development of the fruit. These tests indicate that it takes nearly all of the food material formed in about 30 leaves to develop a large size, high quality Apple of such varieties as Rome Beauty, Winesap, or Delicious. In the normal tree much **vegatative growth is necessary** to keep the tree in good fruitful condition. There are no accurate estimates of how much dry material is formed per year in the growth of leaves, bark, and wood of the trunk and root system. It seems probable, however, that at least 50 pounds of dry matter must be annually laid down in a 20-year-old Apple tree if the tree is making the good growth associated with fruitfulness. This assumption is based on the estimated increase in total wood of a tree. It appears reasonable that the dry weight of a normal Apple tree will increase fully 500 pounds between the ages of 15 and 25 years if the tree is making a good growth. In addition to this increase in weight of a tree, there is a loss each year in dry matter from foliage drop, which probably amounts to 6 to 10 pounds.

From data in Table 1, it can be seen that Apples average approximately 15 per cent. dry matter. Thus a crop of Apples totalling 500 pounds, which would be a moderately good crop for a 20-year-old tree, would contain approximately 75 pounds of dry matter or food products formed in the leaves. Thus it is probable that, on the average, not much more than half of the total food material of the leaves goes to the fruit, and that nearly half goes to develop wood, bark, leaves, and other vegetative tissues of the trees, under conditions of optimum growth and productiveness.

Observations and data collected in connection with other work indicate that when there is a **heavy crop of fruit on the tree,** this fruit to a large extent utilises the food material from the leaves, and that wood growth is thereby reduced. Only when there is a sufficient excess of food material beyond the demands of the fruit do the buds, twigs, and trunk receive an adequate supply. Measurements with Apple trees show that trees carrying a heavy load of fruit increase relatively little in trunk circumference during the year the crop is borne. Similarly, there is less thickening of twigs, and of spurs and buds when a heavy crop is produced, than when the crop is light. These observations indicate that the best nourishment of buds and the greatest growth of wood occurs only when there is sufficient food material from the leaves for the development of these structures after the fruit is supplied.

If the tree produces one Apple for each 10 or 20 leaves, there will be relatively little thickening of twigs and branches; fruit buds will generally not be formed for the following year, and there will be limited storage of food materials to start the tree into vigorous growth the following season. On the other hand, if the tree has an average of 40 to 50 leaves per fruit, the fruit will be larger and better flavored, and, in addition, there will be sufficient food materials to form strong buds and to result in good thickening of twigs and spurs, and to permit sufficient storage of food materials to give vigorous bud and blossom development the following spring.

Under the condition of these tests there was a marked increase of sugar in fruit grown with large leaf areas. While fruit on unringed branches would show some increase in sugars as a result of greater leaf surface, this increase would be less marked than that here reported. One unringed branches the accumulation of carbohydrate materials would be free to move out of the branch and in considerable part contribute to trunk and root growth, whereas, under the conditions of these tests it was confined to the ringed branches and tended to be stored, at least in part, in the fruit.

The question is often raised, "Why does the fruit appear to be small when the trees are bearing a very light crop?" Frequently trees produce a light crop of fruit following the production of a heavy crop the year before. Usually the light crop is the result of relatively few fruit buds being formed. Such fruit buds as are formed under these conditions are likely to be on long spurs or terminals which, because of long slender growth, are somewhat isolated from the tree as a whole. Therefore there may be a restricted movement of food materials, either into or out of such spurs or twigs.

The fact, that the long spurs or twigs blossomed when most of the spurs of the tree did not, indicates in itself that these spurs are somewhat isolated from the tree as a whole. Usually they do not carry a large leaf area. Fruit borne on long spurs is thus likely to be small regardless of the amount of crop on the tree. Usually, when the tree bears a light crop the fruit borne on strong spurs or close to the branches will be of good size for the variety.

Relation of Moisture Supply to Leaf Function.

As previously discussed, a certain amount of moisture must be available for the tree and be present in the leaves before their stomata open to admit carbon dioxide from the air. Under conditions of excessive dryness, therefore, leaves do not properly function and there is apparently a decrease in larbohydrate manufacture. This has been shown by Furr and Magness, under conditions of moisture shortage. Under drought conditions, the results are similar to those obtained with reduced leaf area, namely, small size of fruit, poor dessert quality and, in many cases, poor color. Results in these investigations have been obtained from the trees receiving a fairly adequate supply of moisture throughout the growing season. Any appreciable moisture shortage would result in reduced size and quality of the fruit.

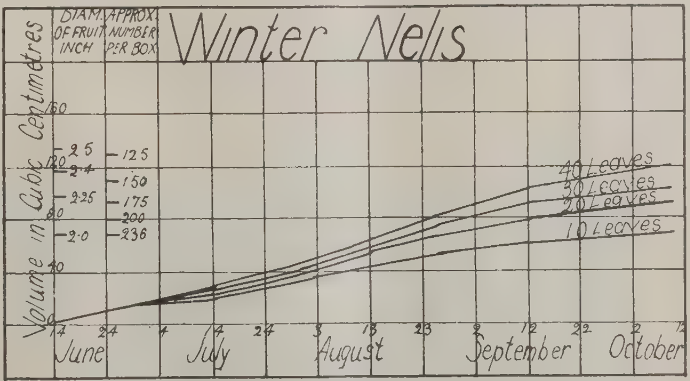


Fig. 7. Growth of Winter Nelis Pears on ringed branches with varying numbers of leaves per fruit, Wenatchee, Wash., 1929.

Note.—Under Southern Hemisphere conditions, the above months would read December, January, February, March and April.

CASES MADE FROM PINUS INSIGNIS.

A visit was paid by a representative of the "Fruit World" to the factory of Mr. J. E. Payne, casemaker, Box Hill (Vic.), and pleasure was expressed as to the size of the plant and the economical way Mr. Payne had his timber, shooks and cases stacked in his factory.

Mr. Payne commenced making cases entirely from Pinus insignis 22 years ago, prior to that he was making cases from hardwood. During Mr. Payne's experience of making cases from Pinus insignis, he is firmly convinced that this timber is the most suitable for casemaking, and accordingly installed a special plant for the treatment of this timber. Altogether Mr. Payne has 14 on his staff when going at full capacity. The features of this timber when the case is made up is that it doesn't shrink, warp or twist, and Mr. Payne claims that not one case in his factory has split, caused through the nailing down. The writer inspected a large number of cases, and could not find one showing any signs of a split, the nail having gone clean through.

The timber is cut in the winter time, and for a time is stacked on end to allow for the drying off of moisture; they are then stacked in fliches and seasoned, ready for making up in the next season. Mr. Payne carries a stock of 10,000 cases and about 8,000 in shooks ready for making up.

The Pinus insignis case will stand a lot of knocking about, the case being extra strong.

Mr. Morrison, of Doncaster, exported 1,800 of these cases of Pears without wire binding, and received excellent results, as well as price for his fruit.

Anyone wishing any particulars regarding this case can have same by writing to Mr. J. E. Payne, Casemaker, Box Hill (Vic.).

Tasmanian Fruit Industry.

Conferences at Launceston and Hobart.

The Annual Conferences of Tasmanian Fruitgrowers convened by the State Fruit Advisory Board were held at Launceston and Hobart at the end of July. Mr. B. J. Pearsall presided.

Incorporation of Board.—A motion favoring the incorporation of the State Fruit Advisory Board "and to empower it to execute, on behalf of growers, any authority which the growers may confer on it," met with a certain amount of opposition, bureaucratic control being suggested. After full discussion, however, the motion was agreed to.

Shipping Information.—With the object of having shipping information made readily available, a motion was moved, urging that Northern and Southern fruit shipping agents act in conjunction with the Board, but the proposal was negatived.

Defence Fund.—On Mr. McGowan's motion, Conference endorsed the action of the Board in lodging claims for damaged cargoes, and instructing the Board to use the Defence Fund in an endeavor to recover losses.

Shipping Charges.—On the motion of Mr. W. Calvert, it was resolved that in view of the general reduction throughout Australia, the shipping agents be requested to reduce the shipping charge to 2d. per case.

Ripeness of Fruit.—Mr. McGowan moved in favor of a definition of ripeness of fruit being incorporated in the grading regulations; this was subsequently withdrawn, and a resolution substituted requesting a Board of Reference where any doubt exists with regard to rejections.

Brokers' Licenses.—The Advisory Board was instructed, on Mr. Reed's motion, to seek legislation for the licensing of brokers' and agents' representatives in Tasmania.

The compulsory uniform branding of cases was also advocated.

Sugar Concession Committee.—On Mr. Astell's motion, Conference entered an emphatic protest against the slight by the Minister for Customs in not accepting the nomination by the Advisory Board for the appointment of the jam fruits representative on the Sugar Concession Committee.

Advertising Fruit.—It was decided, on Mr. L. Taylor's motion, that the Board make an investigation into the system of advertising fruit in U.K., so that Tasmania received her due share of publicity.

A resolution requesting a referendum re a voluntary levy of 1½d. per case on all fruit exported, to establish the industry on a firm basis,and for advertising Tasmanian-grown fruit was deferred until the Board received statutory powers.

* * * * *

Hobart Conference.

The Minister for Agriculture (Sir Walter Lee), in opening the Annual Conference of Fruitgrowers at Hobart on July 30, congratulated the growers on the reports from overseas regarding the high quality and packing of Tasmanian fruit. As regards the recent Royal Commission the results were more or less indefinite. As other primary products paid an inspection fee, the Government proposed to charge an inspection fee on fruit, probably one farthing per case. Referring to the request that the State Fruit Advisory Board be given statutory powers, the Minister said he would call another conference of the Board and all interested, as great care was necessary before introducing legislation to deal with marketing generally.

Advisory Board.—Mr. Saunders' motion requesting statutory powers for the Advisory Board was carried by a narrow margin, 32 voting in favor and 28 against. Resolutions regarding the use of the Defence Fund, reduction of shipping charges, Sugar Concession Committee, advertising fruit overseas, and licensing of brokers, as carried at Launceston, were agreed to.

Shipping Space Allocation.—A resolution endorsing the action of the Advisory Board in appointing representatives to act on the shipping space allocation committee was carried.

In the discussion, several delegates spoke in favor of the present system and expressed confidence in the shipping agents.

Hobart and Tamar Ships.—Mr. Harrison's motion was agreed to, requesting that arrangements be made whereby vessels for overseas going to the North be filled there, and those going to the South be filled there.

Overseas Representative.—Conference adopted a resolution in favor of appointing a representative to look after the interests of Tasmanian shippers on overseas markets.

Agricultural Department Appreciated.—Mr. W. A. Smith moved that representations be made to prevent any reduction in the educational and investigational staff of the Department of Agriculture. Carried.

IMPERIAL FRUIT SHOW.

Tasmanians Win Prizes.

At the recent Annual Conference of Fruitgrowers held at Hobart, the Director of Agriculture (Mr. F. E. Ward) presented Hon. W. H. Calvert, M.L.C., with three first prize certificates, one second, and a third prize certificate won at the Imperial Fruit Show, London, with Apples exhibited by Messrs. W. H. and D. F. Calvert.

Hon. W. H. Calvert said he looked upon the pleasure of winning the prize from the point of view of the Tasmanian fruit industry, rather than from that of a personal success.

TASMANIAN APPLES APPRECIATED.

Mr. R. Mumford, fruit salesman and exporter, Melbourne, states that the reports from overseas congratulating Tasmania on high quality fruit and packing are justified by the good quality and well packed fruit being now received on the Melbourne market from Tasmania.

ORCHARD IMPLEMENT CATALOGUE.

We are in receipt of a new catalogue just issued by H. V. McKay, Massey Harris Pty. Ltd. The catalogue contains 96 pages, many pages are beautifully illustrated in colors. An aerial view in colors of the Sunshine Harvester Works is most impressive. Special implements of interest to the orchardists which are illustrated and described fully are: Power spraying plant, spray guns, horse hoes and cultivators, disc harrows and cultivators, stump-jump and mouldboard ploughs from one to eight furrow, disc ploughs in various sizes.

A copy of this catalogue will be sent on application to the Sunshine Harvester Works, Sunshine, Victoria, or branches in the various States.

Eliminating Unprofitable Fruit Trees.

(By J. M. Ward, Superintendent of Horticulture.)

IN DISCUSSING such a subject as the elimination of unprofitable fruit trees, one cannot ignore the fact that few fruit trees are profitable at the present time. That, however, is not the fault of the majority of trees, nor of the growers—rather is it due to something over which the producers have no control. The general financial depression which has affected all primary producers so much, and which has made most branches of orcharding unremunerative, will, we all hope, soon pass, and fruit production again become profitable.

In the meantime it behoves orchardists to take careful stock of their trees and eliminate the type or variety of tree that is not wanted—the one that will not pay for its keep, even under favorable conditions. This applies to all kinds of fruits—deciduous, citrus, and vine.

The writer recently visited an orchard of over 50 acres in area, in which there were at least 50 varieties of fruit trees. These included some twenty varieties of Apples, the remainder consisting of several varieties of Plums, Pears, Cherries, Almonds, Peaches, and Lemons. This particular orchard, which can be taken as typical of a number of orchards in Victoria, has been particularly unprofitable, because of mismanagement from the planting onwards, and, although originally an excellent property and despite its close proximity to Melbourne, it could be purchased to-day for less than one-quarter of its cost.

This property, which will serve well for the purpose of this article, was purchased by a professional city man, who wanted to make it a commercial proposition. The situation and soil were ideal for commercial orcharding. The initial mistake made was in the selection of varieties. It appears now as if, at the time of planting, the intention of the owner was to sell his fruit on the local and overseas markets, and to give each market a different kind of fruit every week. At any rate, one is justified in arriving at such a conclusion, after taking stock of the varieties of fruits, and more particularly of Apples.

One can be forgiven for making, through lack of knowledge, a wrong selection of kinds to plant; but that one should continue to retain these for a period of some 30 years is beyond comprehension. On this particular orchard there are some six to twelve trees of each of a number of varieties, the majority of them producing fruit of very poor quality. The varieties are ones little known in the fruit trade, and buyers do not seek them. Thus they are marketed at a discount. The only variety worth while that has been planted is the Jonathan Apple, and these have been put out in one large block without any thought of cross-pollination, consequently they do not yield to their full capacity.

Of the 50 odd acres of the orchard in question, there are not more than 20 acres that yield profitable crops, despite the fact that the trees are quite normal in growth and health.

The point I desire to make clear is, that although all the trees have received similar attention by way of cultivation, manuring, disease control, pruning, etc., less than half of them are of any commercial value. In other

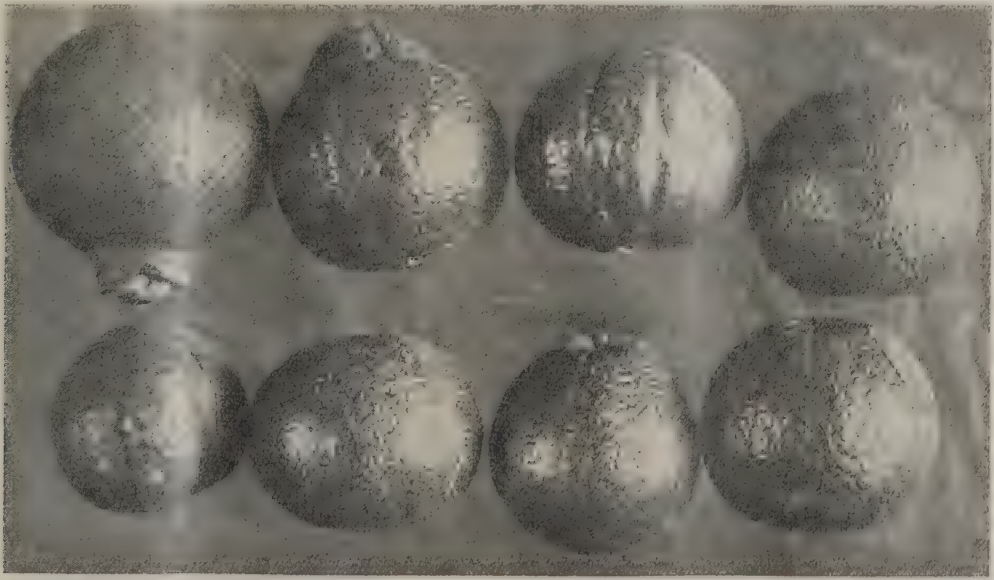


Fig. 1.—Eight Navel Oranges picked from one Tree.

Such Oranges are known as "off type" Navels. The raised sections of the rind are due to bud mutation. Indiscriminate selection of bud-wood is responsible for the tree producing the type of fruit featured in this illustration.

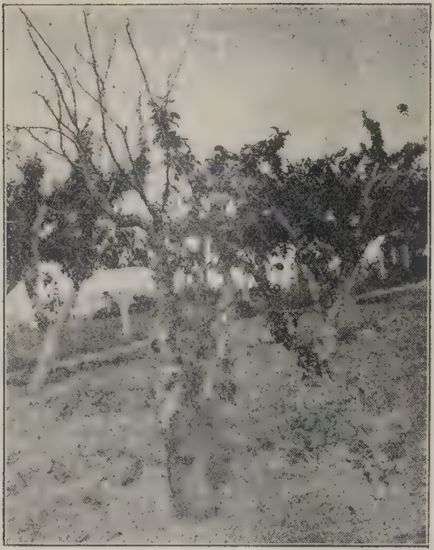


Fig. 2.—An Apple tree cut hard back and grafted, which became affected with Polystictus versicolor.

words, had the owner of this property planted only 20 acres of trees of about four good varieties—six as an absolute maximum—and devoted the same attention to these, he would have now a sounder proposition, and one that, under normal conditions, would have been a paying venture. Even after paying dearly for experience with the assorted fruits, if he had reduced the majority of varieties by re-working them to better known commercial kinds, the early wrong could easily have been righted.

Although I have quoted a particular property, it can be taken as more or less typical of a number of others, especially those planted by the city man, who, apparently, is carried away with the varieties listed in a nurseryman's catalogue.

Whether it be citrus, Apples, Pears or other fruit, the trade, the world over, recognises comparatively few varieties that have become well and favorably known to the retailer, who will pay a reasonably good price for a continuous supply of the variety he requires for his trade. Odd lines of little known varieties are seldom wanted by any trader; although there are times when he is forced, through circumstances, to buy them at lower prices than he is prepared to give for better commercial lines.

With deciduous fruits there is not the same trouble experienced, in what may be termed "off-type" varieties, as is the case with citrus fruits—more particularly Navel Oranges.

The chief trouble with deciduous fruits is the number of poor quality varieties, and the many chance seedlings that come under notice every year. In this regard almost every grower has his own "pet." If a seedling should come up by chance in any one's garden, the owner often considers it is the best ever produced. Later on it is propagated and gradually distributed throughout the country, at considerable cost to the industry, and particularly to those who have a fad for planting so many new and untried varieties.

Some idea of the number of kinds of Apples and Pears growing in commercial orchards in Victoria, may be gained from the fact that last year 63 varieties of Apples and 21 varieties of Pears were shipped overseas. Many of these would be small parcels of, say, 10 to 50 cases of kinds little known to any one. It is common knowledge that, when buyers abroad make contracts for f.o.b. sales, they stipulate the size and variety required, the latter usually being limited to from four to six kinds. The personal likes and dislikes of growers are not considered by the trade.

In regard to Oranges, it is well known there are a number of types that are of poor or even low quality fruit. This can be seen in almost every Orange grove in Australia—and elsewhere for that matter; yet in the same grove, side by side with these poor quality trees, can be seen trees bearing high quality fruit. To some extent this can be attributed to the propagator of the trees who has not exercised care in the selection of his buds. (See Fig. 1.)

In the Melbourne fruit markets, at certain periods of the year, Oranges are sold at prices ranging from 8/- to 18/- per case; those purchased at 18/- per case are of the same variety as the 8/- ones, and the production of both types costs the same amount per case, but the former are of a different type and of higher quality.

Sufficient has been said to justify the elimination of non-commercial varieties. In considering this matter, growers should bear in mind that a "dud" tree costs as much to keep as does a good tree. Apart from type and variety, there may be diseased trees, or trees affected with soil or other troubles, that require replacing.

The "duds," provided they are healthy, can be replaced at little trouble and cost by re-working better types and varieties. The change over can be a gradual process, that is, a number can be re-worked each year over a period of from three to five years. Details of re-working are given in a Departmental Bulletin on "Budding, Grafting, and Inarching of Fruit Trees," obtainable from the Department of Agriculture at a cost of 5d. (including postage). As this Bulletin is well illustrated, it enables the beginner to become quickly acquainted with the details of budding, grafting, and re-working of trees.

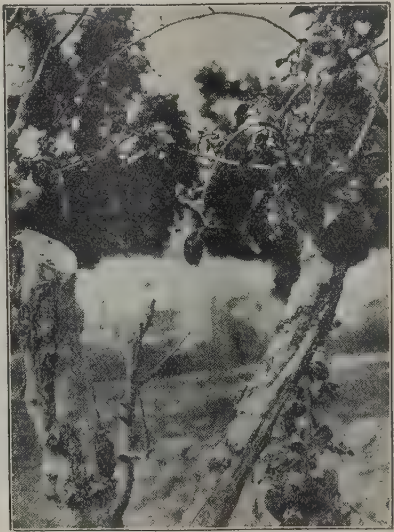


Fig. 3.—A close-up view of the tree shown in Fig. 2. Note the injurious effect from attacks by the fungus P. versicolor.

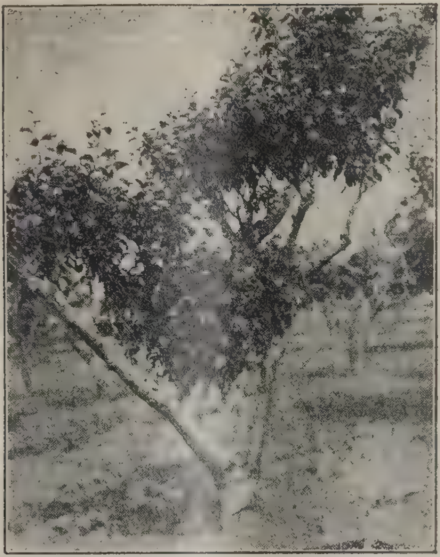


Fig. 4.—An Apple tree in the same orchard as are those shown in Figs. 2 and 2, only partly cut back.

Numerous scions were grafted on to each branch. There is no sign of any attack by P. versicolor .

To those growers who desire to re-work Apple trees over to other varieties, I would emphasise strongly the necessity for cutting back as little as possible of the main arms of the trees. (See Figs. 2, 3, 4, and 5.)

THE FRUIT FLY.

Can Multiply From One to 8,250,000 in 3½ Months.

The following figures, compiled by Mr. L. J. Newman, Entomologist, W. Aust. Department of Agriculture, show how it may be possible for the fruit fly (Ceritatus Capitata) to multiply from one to 8,250,000 in 3½ months.

September 1 . .	1 fly lays 300 eggs	
September 10 .	300 maggots	
October 10 . .	300 pupae	
October 28 . . .	300 flies	
	Say ½ females—	150
		300
November 7 . .		45,000 eggs
November 11 . .	45,000 maggots	
November 25 . .	45,000 pupae	
December 8 . .	45,000 flies	
	Say ½ females--	27,500 females
		300
		8,250,000 eggs

Say half develop—4,000,000 flies.

This Happened in China.

Ah Fat: "What's your brother doing—the one who applied for a government job?"

Wun Lung: "Nothing. He got the job."

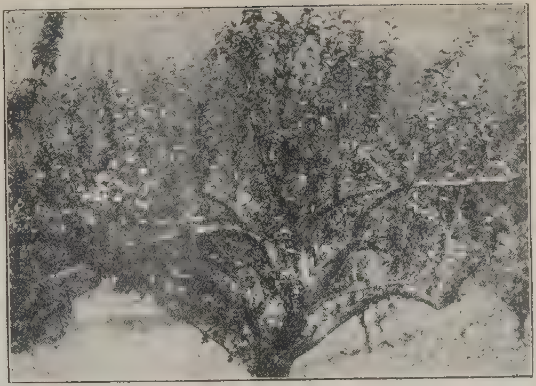


Fig. 5.—Several hundred buds and scions have been placed on this Apple tree. All new growth now showing is from these scions and buds.

This hard cutting back has proved fatal to thousands of Apple trees, due to the fungus Polystictus attacking and doing great harm to the tree when cut hard back. Details regarding this are contained in the Bulletin referred to above.—"Journal of Agriculture," Vic.

(The subject of "Budding, Grafting and Inarching of Fruit Trees" was dealt with and illustrated in a recent issue of the "Fruit World.")

AUSTRALIA'S NEAREST FOREIGN MARKET FOR FRUIT.

IN VIEW OF THE ATTEMPT to push Australian goods in the East, it is interesting to note the large increase in population during the past ten years in Dutch East Indies. The census taken in 1920 gave the total population as 49,000,000. The census taken at the end of 1930 was 61,000,000, an increase of 24 per cent.

An advance of 31 per cent. occurred in Sumatra, where recent industrial and commercial activities have been greatest. Sumatra and small adjacent islands now have a population of 8,233,000, while Java and Madura, still the most densely populated islands, have 41,695,000. Incomplete returns show approximately 2,100,000 for Dutch Borneo and 4,000,000 for the Celebes.

The European population of the principal cities has increased 44 per cent. in the past ten years, while the Chinese population has increased 74 per cent. Batavia now has 31,000 Europeans, Soerabaja 26,000, Bandoeng 20,000, and Medan 4,000. Chinese residents are as follows:—Batavia 72,000, Soerabaja 30,000, Bangoeng 17,000, and Medan 30,000.

FOR YOU ALONE.

A task is here no hand save yours can do.
A task which through the ages waited you.
Men high and low have lived and dreamed and died
While yet this need remained, unsatisfied.
No other hand could touch this harp to song,
No other brain could right this ancient wrong,
No other strength could break from this duress,
No other eye could see this loveliness.
Doubt not, but give all force, all faith you own,
Unsought or sought, this task is yours alone.

—"The Humane Pleader."

AUSTRALIAN DRIED FRUITS ASSOCIATION.

Big Meeting of Growers at Red Cliffs.

Mr. J. M. Balfour, Chairman of Victorian Dried Fruits Board Presents Full Statement.

Illicit Trading Dealt With and Mr. Gallagher Cleared.

AT a well attended and representative meeting of the Red Cliffs Branch of the A.D.F.A. on August 13, Mr. J. Stewart presiding, a full statement regarding the Victorian Dried Fruits Board was presented by the Chairman of the Board, Mr. J. M. Balfour. Hereunder is a summary of Mr. Balfour's address:

The 1931 pack of Australian Dried Fruit was 71 per cent. of the 1930 pack—a reduction of 21,090 tons. The Victorian production was 62.6 per cent. of the previous year, a reduction of 17,486 tons.

The carry over from 1930 was 2,500 tons, and this was realising over £40 a ton. Australia had sold 28,180 tons of 1930 Sultanas at £42 per ton, 3,045 tons of 1931 Sultanas at £55/14/- per ton, and 5,163 tons of 1931 Currants at £39/12/2. The addition of the exchange made the prices attractive. At the present rate of selling the market would be clear in Australia and abroad for the 1932 crop.

The 4/- per ton levy yielded £6,000. This year's expenditure would be £11,000, the difference being made up from earlier credits. £5,500 was allotted for publicity. £1,000 was earmarked for salaries and travelling expenses to suppress illegal trading, plus £750 to the South Australian Board in connection with heavy legal costs to maintain legislative control.

To suppress illegal trading there had been 32 prosecutions, and the fines amounted to £561. Mr. F. Gallagher, of Red Cliffs, was thanked for his public spirited and successful efforts in assisting to secure recent convictions at Mildura, at the risk of having his motives misinterpreted. Throughout, Mr. Gallagher had acted in close co-operation with the Board.

Efforts were being made to evolve a uniform packing shed statement.

Publicity methods included newspaper advertising, railway carriage spaces, show cases, recipe cabinets, street hoardings, agricultural shows, broadcasting, health talks, cookery demonstrations, and publicity van equipped with cinematograph and wireless. Mr. Marchant, in this publicity van was performing excellent service.

The Raisin bread and Raisin pie campaign was being conducted with enthusiasm and success. The bakery and confectionery trades were co-operating nicely.

In conclusion, Mr. Balfour acknowledged the valuable assistance from all members of the Board. Mr. E. E. Meeking and the growers' members, Messrs. E. T. Henderson, S. R. Mansell and H. V. Davey were most willing at all times. The Secretary, Mr. Baker and staff had been loyal and enthusiastic.

AUSTRALIAN DRIED FRUITS.

Oversea Sales.

Mr. W. C. F. Thomas, Chairman of the Commonwealth Dried Fruits Export Control Board, has received advice from the London Agency of the Board that sales of Australian Dried Fruits were well maintained during the week ending August 20. Sales amounted to 822 tons, valued at £35,970.

Of new season's Currants 433 tons averaged £40/3/4 per ton, and 214 tons new season's Sultanas were sold at an average of £54/6/8 per ton. Old season's Sultanas averaged £40 for 159 tons.

Sales in Great Britain from this season's deliveries now total 10,179 tons, compared with 5,587 tons of the last season's deliveries at the same date.

The demand is steady, and the outlook generally satisfactory, as unless unexpected circumstances intervene the seasonal demand should be felt during the months of September and October, more especially as Australian shipments are now practically complete for the present season.

THIS IS GOOD ADVERTISING.

Dried Fruits Publicity Van.

THE ADVERTISING CAMPAIGN of the Victorian Dried Fruits Board was fully described by the Chairman, Mr. J. M. Balfour, at Red Cliffs, in mid-August, among other things he stated:—

An illustration of the class of work that is being done by the publicity van is shown in a visit to Goulburn a fortnight ago. Besides dressing six windows and arranging for four others, the representative (Mr. Marchant) addressed 2,400 school children, the Rotary Club and a ladies' meeting. The latter was, according to the local papers, the largest ever held in Goulburn. The enthusiasm at the close was wonderful. The lecture, the pictures and the samples of fruit shown created a definite rush, and all grocers reported a strong activity in the sales of dried fruits. During the week he showed also the pictures at the Methodist Church, St. Patrick's College and at Goulburn gaol to 250 prisoners. The effect of such publicity in a provincial city can be well imagined.

Last week, Mr. Marchant visited Canberra and delivered an illustrated lecture to politicians at Parliament House. The Minister for Markets, Mr. Parker Moloney, introducing Mr. Marchant, explained that the object of the visit was to make known to Australia the importance of the dried fruits industry. The press reports state that the lecture was well received and favorably commented upon.

"GOODWILL SHIP" FOR CANADA.

With the pleasant title of "The Goodwill Ship," the "Canadian Constructor" will leave Australia early in September.

Among other items, of cargo there will be some 130,000 cases of canned fruit, including 50,000 cases of canned Pineapples, 300 bales of wool and wool tops, 500 cases of gelatine, 100 tons Peanuts, 80,000 cases of dried fruits and other cargo comprising butter, timber veneers, rabbits, Oranges, fruit juices, poultry, eggs and egg pulp, and wine.

The Montreal Harbor Commissioners have agreed to supply free storage space at the Canadian end.

The Minister for Markets (Mr. Parker Moloney) expresses the hope that efforts will be made to ensure the shipments being a record, thus to create added interest on arrival in Canada.

* * * * *

Mr. A. E. Hyland, Director of Australian Trade Publicity in the United Kingdom, visited Canada in August to assist in a publicity campaign for Australian dried fruits, dairy produce and wine. He is remaining to assist.

Mr. L. R. McGregor, Australian Trade Commissioner, is collaborating with Mr. Hyland to secure best results.

Queensland Citrus Industry.

Extension of Packing House Movement.

THE idea of central packing houses is gradually extending in Queensland in the citrus and deciduous areas. Following on the success of the community packing house at Mapleton last season, the growers of the Blackall Range district have extended the movement by opening a packing house at Flaxton, another centre on the range.

Both these packing houses expect to handle 7,000 cases each for the season.

The Flaxton Packing House, as a trial, is using reconditioned Australian dump cases, which are not entirely satisfactory.

The Mapleton Packing House is using a locally-cut standard case, and finds that satisfaction is being given to buyers.

All varieties of Oranges and Mandarins, including Scarlets and Emperors, are being packed in this case, and are opening up in excellent order on the markets.

Since the advent in Queensland of Mr. Jas. H. Gregory, Government Packing Instructor, growers have learned what a properly milled standard box is like. The old type, as is used still in some districts—which was cut on the same pattern as a Banana box—is now rapidly disappearing. This box caused much dissatisfaction owing to it needing 64 nails and extra time in manufacturing.

Fancy labels are being used by both packing houses, and are easily noticed on the market. Mr. S. Gregory is again in charge of the Mapleton House, and Mr. L. Adams is at Flaxton. Mapleton are using a Buzacott Master Grader, and now are in the happy position of having the railway truck run into the packing house for loading, reducing handling and cartage to a minimum.

Flaxton Packing House is equipped with a Lightning Sizer and Brusher, but the fruit, when packed, has to be carted eleven miles to the rail at Palmwoods. Consideration is being given by the Montville and Palmwoods growers to an extension of the movement in the Blackall Range District.

* * * *

Gayndah, which is an inland district and which produced most of the Queensland citrus displayed at the Hobart Exhibition, is considering the erection of a packing house for next season. Whilst this is only a small district producing about 25,000 cases, it grows Lemons second to none, and Oranges that will compare favorably with the best Renmarks or Milduras. The leading growers, Mr. W. Benham, of Byrnestown, and Mr. R. Ulcoq, of Gayndah, have no difficulty in keeping amongst the top market prices.

It is claimed that Mr. Benham's grove, "Benyenda," is the best in Australia. Visitors from other States and districts are keenly appreciative. Covering an area of between 30 and 40 acres, situated on the Burnett River, the grove is in an ideal position. Planted on some of the worst prickly pear land, the results obtained are little short of marvellous. Mr. Benham and his family do the work.

The grove is now under irrigation from a central over-

P & DAVIES PTY
F2287

To aid the Queen Victoria Hospital appeal, Melbourne, Wholesale Fruit Merchants, donated the fruit on the above motor lorry, which paraded Melbourne in a big procession.

head tank on the highest point of the plantation, which is filled by pumping from the Burnett river. The main varieties grown at "Benyenda," are Washington Navels, Valencias, Glen Retreat Mandarins, and Lisbon Lemons. Up-to-date gas chambers and ethylene plant are installed, the fruit being stored in single layer trays, whilst being cured, sweated or colored.

Fruit is sized and marketed, the first grade under a fancy label with the brand "Benyenda" in large letters accross the top, whilst the second grade is stencilled only. All cases are wired, a Gerrard wire-tying outfit being installed for this purpose, proving a boon to country order buyers who are able to obtain the cases ready wired for despatch to all parts of the country.

The first grade of Oranges and Mandarins are all wrapped. Mr. Benham is an ex-Milduraite, and still comments on the excellence of the lower Murray Navels. Being entirely a young grove, this plantation has the best of its life in front of it. A nursery of selected budwood worked trees is being run in conjunction with the growing of fruit for market.

Mr. R. Ulcoq, of Gayndah, which is about 20 miles from Byrnestown, and also on the Burnett, is the progressive leader of a progressive district. He is one of Queensland's best Mandarin growers, growing and marketing wonderful quality Mandarins and Lemons. The Gayndah growers are keen to be kept in touch with the latest in the citrus world and make a point of welcoming Departmental officers to the district. Occasion is taken of Departmental visits, for addresses and discussions to be held, which usually last until the wee small hours. Visits during the last month from Messrs. R. Prest, J. Gregory, and A. Somerville, of the Queensland Department of Agriculture and Stock, have been greatly appreciated.

* * * * *

Tamborine Mountain.—It is expected that the packing house will open in the next few weeks. Tambourine is the most southern district of Queensland overlooking the Pacific Ocean. The output from Tambourine is in the vicinity of 10,000 cases per annum, Mandarins and Oranges.

Generally speaking, the average grower has not had a good season owing to low prices caused through the bad weather conditions, and the shortage of money stopping the public from buying freely. It is hoped that this will only be a passing phase and that next season will be bright for the industry again. More Queensland growers are adopting progressive methods: wiring, wrappers, plain and fancy. Fancy labels and modern cases being seen with greater frequency on the sections in the market.

Orchards are receiving increasing attention. Power spraying and power cultivation being increasingly used by the leading growers. One disadvantage most growers labor under is the bad state of many of the roads. These unlike most good things, unfortunately do not appear to improve with old age, although the use of up-to-date motor vehicles has improved things to some extent. With a closer attention to co-operative effort amongst themselves, and with the other citrus producing States, Queensland growers in the future should have brighter things to look forward to.

Mr. J. A. Gore, Australian representative for "Pysect," visited Brisbane for Royal Show Week, and did good business. The Committee for the Direction of Fruit Marketing in Queensland decided to take up a local agency for this reliable insect destroyer.

The Victorian Dried Fruits Board is spending £5,500 on publicity to increase the sales of dried vine fruits. A comprehensive campaign is being conducted.

THIRD PRIZE

Douglas Gow, of Stanthorpe, Queensland, winner Orient Cup, London, 1931, for best export Apples. He won it also in 1930. Picture shows Orient cup on right.
—(Photo. by Collas.)

Do not run any Financial Risk with your Fruit
but Consign it to

HEDLEY GEEVES LIMITED

Telegraphic Address:
"Apples, Brisbane."
(Hedley Geeves, Managing Director)
Registered Shipping No. 6.

FRUIT EXCHANGE——BRISBANE

SELECTED AGENTS FOR:
Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.
Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

QUEENSLAND BANANAS IN W.A.

W.A. Grower Requests Prohibition Because of Fruit Fly.

Minister Says Entry of Bananas Not Prohibited.

Further Evidence Being Secured.

AT the recent Fruitgrowers' Conference in Perth, Mr. Ilbery, of Mundaring, stated that Bananas from Queensland contained the Queensland fruit fly, which was a pest far worse than the fruit fly previously existing in W.A., and he hoped that Queensland Bananas would be prohibited.

The Minister for Agriculture (Mr. Ferguson), stated that no action was being taken to prohibit the entry of Queensland Bananas into Western Australia. The matter was in hand, but further evidence must be secured before prohibiting the Bananas.

Fruit Shipments
United Kingdom
and the Continent

W. D. PEACOCK
& CO.
London Fruit Exchange,
Spitalfields, London, E.1.
AND HOBART, TASMANIA
Solicit Consignments
The High Standing and Long Experience of this Firm is a Guarantee that the Best Interests of Consignors will be conserved.

F. W. Vear PTY. LTD.

Fruit & Vegetable Salesmen
Commission Agents
28 New Wholesale Fruit Market,
Melbourne, Victoria

Highest Market Rates Assured
Prompt Settlements

"YARRA"
QUICK BREAKING
White Oil Emulsion
Easy to mix, Effective in result,
Economical in quantity.
Use Now
On Citrus Trees.

PARSONS & JAQUES
Manufacturing Chemists,
6 Patterson St., 155 Yarra St.,
Abbotsford, Vic.

Tasmanian Agents—
N. L. HOPKINS, HOBART.

WESTERN AUSTRALIA.

Fruitgrowers and Small-farm Producers are Organising.

A MEETING OF FRUITGROWERS and small-farm producers met at Perth on August 7, and decided to form an organisation to protect and develop their industries.

One hundred and twenty producers were present from the following districts:—Carilla, Nedlands, Kalamunda, Balcatta, Spearwood, Armadale, Belmont, Welshpool, Sawyers, Mt. Helena, Mundaring, Osborne Park, Upper Swan, Kelmscott, North Wanneroo, South Wanneroo, West Swan, Gosnells, Kenwick, Maddington, Parkerville, Piesse's Brook, Walliston, Royelstone, Swan View, Maida Vale, Bedfordale, Mt. Lawley, Swan, Bibra Lake, Bayswater, Balingup.

Mr. R. S. Sampson, M.L.A., who convened the meeting, was elected chairman. The Minister for Agriculture (Mr. P. D. Ferguson) said that compulsory marketing legislation was not proposed, and that growers could do much by voluntary organisation.

Mr. A. Nock (Gosnells) moved that a Growers' Marketing Association be formed. Trade could be developed in country centres.

Mr. Mark Hayes (Carilla) seconded the motion, which was supported by Mr. R. Knuckey (Roleystone). Carried.

The following provisional committee was formed:—Chairman (pro tem): Mr. R. S. Sampson, M.L.A. Secretary (pro tem): Mr. A. Nock (Gosnells). Vegetable Section: P. B. Brooks (Nedlands), Geo. Tapping (Wanneroo). Potato, Onion and Tomato Section: N. Thorsagdr (Spearwood), J. Arbuckle. Pip Fruit Section: T. Price (Karragullen), Geo. Simpson (Karragullen). Stone and Berry Fruits Section: T. Ilbery (Mundaring), W. Hart (Roleystone). Grape Section: N. Marich (Spearwood), L. Thorn, M.L.A. Citrus Section: W. Temby (Pickering), H. A. Smith (Gosnells). Poultry Section: J. W. Rowlinson (Spearwood), J. F. Vaughan (Perth).

The N.S.W. Dried Fruits Board urges growers to take the necessary precautions, by swabbing and spraying to prevent black spot.

PRUNE GROWERS' PROBLEMS.

Big Yields: Low Prices.

Australian-wide Organisation Favored.

A conference of Prune growers took place on August 1 at Young to consider what action should be taken to combat the record low prices below production costs, growers, mainly repatriated soldiers, relying on Prunes.

It was decided that some form of control, covering all States, was necessary to ensure growers being compensated for the work entailed. Large quantities of Prunes are being sold at unpayable prices. The meeting favored separate Federal control, or, alternatively, affiliation with existing Australian-wide organisations.

A special committee was appointed to conduct initial negotiations to organise this State, preparatory to launching an Australian scheme. A continuance of present conditions will mean chaos and immense loss to the Lands Department which is involved to the extent of about £750,000.

YOUNG TOBACCO PLANTS.

Formalin For Controlling Fungus Diseases.

Interesting notes are to hand from the Russian Department of Agriculture regarding the use of formalin in controlling fungus diseases of young tobacco plants in hot beds. After dealing exhaustively with the subject, the conclusions are as follows:—

In order to prevent the attacks of fungus diseases in the young tobacco plants, the soil of the hot-beds is disinfected with solutions of formalin. In our experiment the treatment, with 1 per cent. and 2 per cent. solutions has led to the best results.

More effective results may be obtained either by increasing the concentration of the solutions and by reducing the periods of aeration, or by altering the technique of the application of formalin.

In using 1 per cent. to 2 per cent. solutions of formalin, it is necessary to test the additional measures destined to keep the young plants in good health, after the influence of the formalin has become weaker or has ceased altogether.

The influence of the formalin on the time of appearance of weeds, and on the number of the latter, may be observed in using solutions of different concentration; still the influence of 1 per cent. to 2 per cent. solutions is not quite sure and reliable.

The fact that the data obtained from the tests of different periods of formalin treatment (leaving out of consideration the concentration of the solutions) are equal to those obtained from a treatment of 24 hours, may be explained by the high degree of volatility of formalin. The covering of the hot-beds with close-fitting glass frames, in order to prevent the volatilisation of the formalin, only partly answers the purpose.

Formalin solutions below 2 per cent. and of 2 per cent. do not influence the course of the microbiological processes in the disinfected soil.

(The Editor, "Fruit World.")

Dear Sir,—

Re Tobacco Plants.

Each year, when planting time arrives there is a wild scramble for plants, and this year, from indications, it appears that there is every possibility of the same trouble.

With increased areas to be planted, and the wet season which is so likely to cause blue mould to attack the seedling beds, it is absolutely folly for any grower to depend entirely on his own seed beds or on the seed beds of any one grower, The wise grower will not place all his eggs in one basket, but so as to be reasonably sure of a supply of healthy plants he will, after estimating his requirements, divide them into three. One third he will hope to secure from his own beds and the other two thirds I suggest he divide between two reputable growers, one in the north and one in the south of the State. He will then be very unlucky if all three sources fail, but it is quite on the cards that one or even two will fail.

Without plants the land is useless, and every safeguard should be taken at once.

T. H. BRUNN, GARDEN SERVICE PTY. LTD.
82 Swanston-street, Melbourne.

At a meeting of tobacco growers held at Albury during August, the folly of sending £1,700,000 to America for tobacco was emphasised: the development of the industry in Australia was advocated.

TOBACCO CULTURE.

Soils: Varieties: Manuring.

A GOOD FRIABLE LOAMY SOIL, preferably of a light character, is considered to be the best for growing tobacco, but various varieties of tobacco are available to suit different types of land, and to produce different qualities of tobacco.

Varieties of Tobacco.

The following varieties of tobacco are recommended by Mr. Temple Smith (Vic. Department of Agriculture) according to soil characters:—

The varieties suited to the light sandy or slaty soil are Little Oronoco, Yellow Pryor, Spotted Gum and Warne. These yield from 700 lbs. to 900 lbs. per acre.

For rich river flats, on which the heavier pipe leaf is grown, it is wise to avoid very heavy dark soils. As the leaf takes its color largely from the colors of soil upon which it is grown, sandy loams should be used for preference. The following varieties are suitable:—Medley Pryor, Blue Pryor, Hester. These are all heavy yielders, giving from 900 lbs. to 1,500 lbs. per acre of cured leaf for plug tobacco.

For red chocolate soils, Hester and Conqueror, for pipe, yield from 800 lbs. to 1,200 lbs. per acre, cured leaf.

On richer soils, either red chocolate or gravel or strong sandy loams, only filler leaf or binder can be grown for cigar making. The best varieties for the purpose are Vuelta de Abajo (known as the sweetest Cuban filler grown in the world), Comstock and Pennsylvania, and yields of from 700 lbs. to 1,500 lbs. are possible.

Manuring Tobacco.

In a bulletin issued by the Victorian Department of Agriculture, in dealing with fertilisers for tobacco, Mr. Temple Smith says that a crop of 1,875 lbs. of cured leaf and stalk takes from the soil per acre 65 lbs. of nitrogen, 89 lbs. of potash, and 8 lbs. of phosphoric acid compared with a 6-ton crop of potatoes which removes 58 lbs. nitrogen, 101 lbs. potash and 32 lbs. of phosphoric acid.

The average crop of cured leaf in Victoria is 1,000 lbs. per acre, therefore, an average crop of tobacco takes only about half the potash, 1/6th phosphoric acid, and slightly less nitrogen than a 6-ton crop of potatoes.

An application of 400 lbs. to 500 lbs. of lime per acre would tend to release a large amount of potash held in the soil, and bacterial action would be improved, also the physical condition of the soil.

It is of the greatest importance that fertilisers applied to the tobacco crop should be of a readily soluble, quickly available character, as tobacco being a quick feeder takes all its nutriment from the land in from 12 to 20 weeks.

Phosphatic fertilisers appear to have a greater effect on tobacco than any others. The tobacco crop is not a

(Continued on Page 527.)

TOBACCO SEEDLINGS

In addition to being, probably, the largest growers of light leaf Tobacco seedlings, we claim to have spent more than any other Grower in trying to protect our Nurseries from disease and in experimental work.

Our three Nurseries, situated 30 miles apart, have a capacity of well over 4,000,000 plants. The varieties grown are Conqueror, Adcock, Warne, Hickory Pryor and Yellow Pryor. Prices range from 17/6 per 1,000, according to quantity Book your order now, and save disappointment when planting time arrives.

BRUNN'S DIRECT SEED SUPPLY CO.,
82 Swanston Street, Melbourne.
Quote "Fruit World," Sept.

The Triple Alliance Planter for the Tobacco Grower--

GROWERS recognise that a poor strike of Tobacco plants is the direct result of planting in extremely hot weather when the surface of the land is so hot that the plants receive a severe check from which a large proportion do not survive.

Further, the fault of many planters is that the manure is distributed in a narrow strip, which has the effect of burning the plant.

Tobacco Planter

The "Harvey" Planter thoroughly mixes the soil and manure. Makes a furrow of **cool, pulverised, moist earth**, into which the plant is deposited. A discharge of water straightens out the roots and pressure plates compact the soil, at the same time pulls a covering of loam over the freshly watered earth.

An ideal plant bed.

Manure Distributor

In addition to the work performed by the planter explained above, this machine spreads the manure over a comparatively wide strip and thoroughly works the manure into the soil.

Another important feature is Hillers are provided to enable the growing of tobacco on a mound; this is necessary in Irrigation Settlements.

Tobacco Cultivator

The Tobacco Cultivator is light, sturdy, and easily controlled. The simplicity in operation enables the driver to be comfortably seated, leaving both hands free for driving.

The ingenious design of this machine enables the operator to cultivate **around and in between** each plant by a mere movement of the foot, without damaging or injuring the plant.

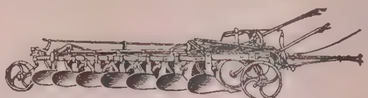
3 Profit Earners for You

These machines embody ideas which are the results of the practical experience of men who are recognised as the best Australian and American growers.

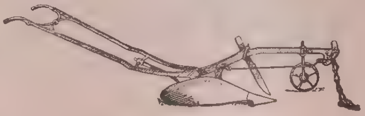
Full particulars from . . .

D. HARVEY, Orchard Implement Manufacturer

BOX HILL - - VICTORIA - - AUSTRALIA



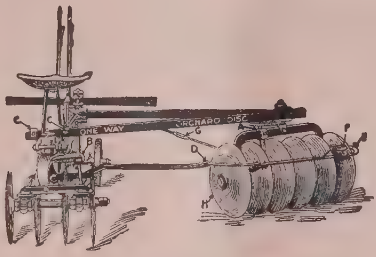
"Harvey" 7-Furrow Shortboard Tractor Plow, fitted with D Steel Shares and Circular Coulters. (Model D2).



"Harvey" Orchard Plow.

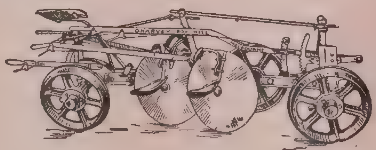
Well Begun Is Half Done Start Well By Choosing Trustworthy Farm . . Implements . .

Expressly Manufactured for Australian Conditions

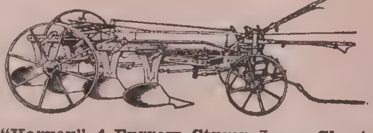


"Harvey" One-Way Orchard Disc Cultivator.

THESE MACHINES ARE AN INVESTMENT NOT AN EXPENSE



"Harvey" Heavy Furrow Orchard Disc Plow.

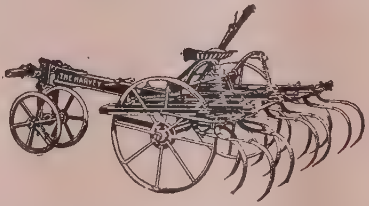


"Harvey" 4-Furrow Stump-Jump Shortboard Tractor Plow. (Model S.J.21).

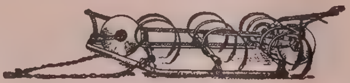
BECAUSE

The hardest ground can
Of the ability to work cl
Of the low-set levers an
There is no danger of d
Absolutely no strip digg
Of the handiness of turn
There's an implement to
friable soil, light, b

Simple to Operate



"Harvey" Spring Tooth Riding Cultivator, with Forecarriage.



"Harvey" Spring Tooth Citrus and Orchard Cultivator.

Whether you are using a single horse or a full team, horses and swings are always well out of harm's way. Whether you are plowing or cultivating, the "HARVEY" Implements will work right up to the butts of the trees, thus entirely eliminating the necessity of working the strips by hand.

"Harvey" No.
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IF YOU

In any implement, w
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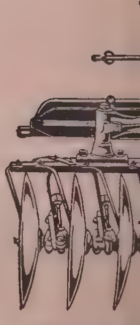

"Harvey" Vi
Extensi

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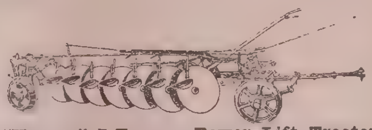
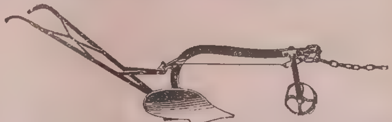
"HARVEY" Machines

Guarantee Thorough Dependability, Efficiency & Economical Operation



"Harvey" 7-Furrow Power Lift Tractor Disc Plow. (Model H.D.4.)



"Harvey" S.F. Backing Off Plow. With Shifting or Fixed Handles. Made in 7, 8, 9 and 10 sizes.

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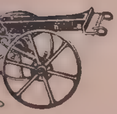
"Harvey" Implements are made to suit your own district



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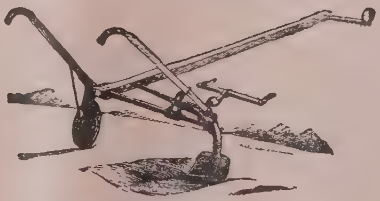
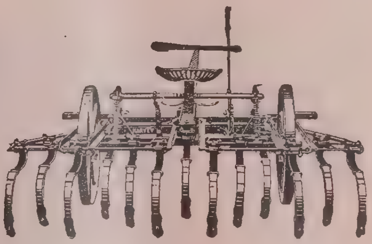
Easy to Manage



"Harvey" Grape and Berry Hoe.



"Harvey" Spring Tooth Riding Cultivator.

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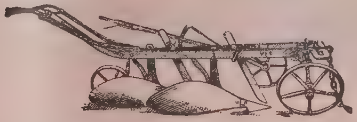
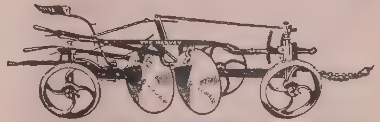


"Harvey" 2-Furrow Shifting Orchard Plow.

SPARE PARTS OBTAINABLE AT SHORTEST NOTICE



"Harvey" Light 2-Furrow Orchard Disc Plow.

s Cultivator.
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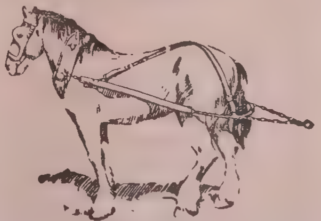
The "Harvey" Implements comprise Disc Plows, Mouldboard Plows, One-Way Disc Cultivators, Two-Way Cultivators, Spring-Tooth Cultivators, Nursery Garden and Tobacco Cultivators, Vineyard Horse Hoes, Orchard Harness. Also a full range of Tractor Plows and Cultivators.



"Harvey" Patent Orchard and Farm Harness.

SIMPLE ARITHMETIC

An Efficient Machine + A Well Equipped Plant

= Bigger Dividends
Smaller Labor Costs

"HARVEY"

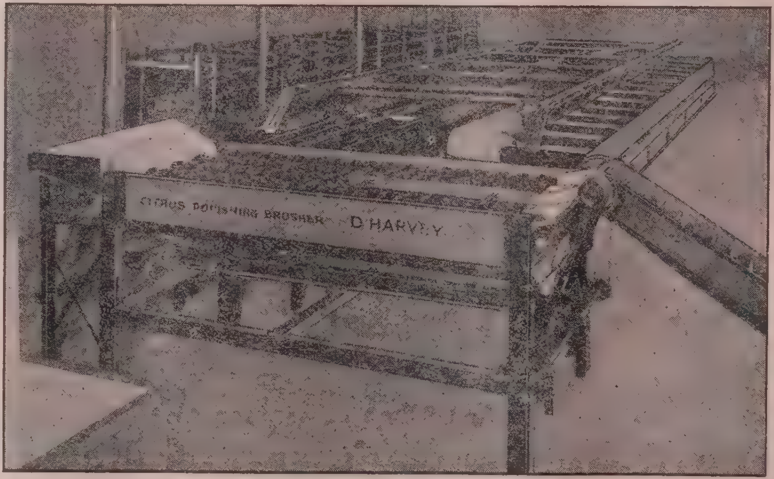
The last word in FRUIT GRADERS

CITRUS GROWERS and PACKING HOUSES

We will build to suit your requirements

The "HARVEY" Fruit Grader can be adjusted to make all size grades $\frac{1}{16}$ $\frac{1}{8}$ or $\frac{3}{16}$ of an inch or any grade desired.

Each grade is adjusted separately without interfering with the grades on either side.



"Harvey" MOLE DRAINER

The Wet Season has made it necessary to drain your Orchard efficiently, economically, and with the minimum of expense. The "Harvey" Mole Drainer will do this FOR YOU—an inexpensive drain that will last for many years.

Full Particulars on Application.

You are cordially invited to visit our stand at the Royal Show

Situated at Plummer Avenue (Opposite entrance to Members' Stand)

D. HARVEY, Orchard Implement Manufacturer

Box Hill, E.11 - - Victoria - - Australia

heavy feeder on phosphoric acid, yet it is found that heavy applications of superphosphate result in highly beneficial advantages to the quality as well as the quantity of the crop.

Applications of up to 7 cwt. per acre are often used on sandy soils, and it is evident, apart from its food value, superphosphate has the effect of shortening the growing period from 3 to 5 weeks, and enables the grower to cure a brighter color leaf.

In America large quantities of superphosphate are also used in tobacco growing.

In his report issued to the Australian Tobacco Investigation Committee, Dr. Darnel Smith, reviewing a tour of inspection of some of the tobacco growing States of America, advises that it has been found there that while on sandy soil up to 800 lbs. of 16 per cent. superphosphate can be suitably applied; where the soil contains a fair percentage of clay heavier dressings can be used with advantage.

The need of phosphates is indicated by the failure of the plant to mature early and evenly. Superphosphate stimulates early root development, but it has also a profound action upon the metabolism of the plant, and a lack of an adequate supply of superphosphate results in the leaves of the plant remaining green for a long time, and failing to show the yellowish blotches and general yellow cast that is indicative of maturity.

Both authorities warn growers against an excess of nitrogen. It has been proved that nitrogen increases the nicotine content of the tobacco and develops plants of a rank, coarse growth.

Victorian tobacco leaf grown from unfertilised soils contains up to 6 per cent. nicotine which is too large a percentage. The best American tobacco contains from 1 per cent. up to 4 per cent. nicotine, the average being just under 2 per cent.

In the United States it is considered that the source of nitrogen should be varied when a fertiliser containing 3 per cent. of nitrogen is used, i.e., 1/3rd of the nitrogen is supplied by nitrate of soda, 1/3rd by cotton seed meal, and 1/3rd by fish scrap.

The same authority, Dr. Darnel Smith, states that the American tobacco growers recognise that a supply of potash is necessary to promote the production of a good healthy leaf surface, and produce good burning qualities in the leaf. It is also generally held that potash manures confer upon tobacco a certain protection from disease.

Owing to the action of chlorine in impairing the burning qualities of the leaf the question of the source of potash becomes one of great importance. The best forms to use are sulphate of potash or carbonate of potash.

In the tobacco growing States of America a complete fertiliser mixture is generally used for tobacco. At one time this was made up of 8 per cent. phosphoric acid, 3 per cent. nitrogen, and 3 per cent. potash. Later experiments have shown that a mixture of 10-4-6 is more profitable. Where the soil contains a fair percentage of clay the allowance of superphosphate is increased up to as much as 18 per cent., making the mixture 18-4-6.—"Commonwealth Agriculturist."

TOBACCO CROPS.

Over 2,000 Tons Expected from N.S.W. and Queensland.

It is estimated that the area under tobacco in New South Wales this season will be over 3,000 acres: In North Queensland over 2,000 acres. Large areas are being planted in Victoria and elsewhere. Under favorable conditions a harvest of about 900 tons of bright leaf and 1,200 tons of dark leaf are expected in Queensland and New South Wales alone.

AMONG THE ORCHARDS.

Doncaster, Hurstbridge, Diamond Creek, Arthur's Creek.

Our travelling correspondent writes on August 27:—

On my journeys round about the fruit orchards, I notice that most varieties of Peaches are shedding their buds freely—at Doncaster, Hurstbridge, Diamond Creek, and Arthur's Creek.

Apples in these districts are looking very well and providing we have good weather there is every indication of a very satisfactory season.

The majority of growers are well up with their pruning and winter sprays. I also notice that the orchards are particularly healthy and free from pests: the rainfall has been good, and fine weather is hoped for from now on.

Most of the growers are nearly finished their fruit carting from the cool stores, and as far as the writer's information is to hand the Apples have kept remarkably well, as there are not so many "sleepy" Apples about this season—only a few cases here and there; in fact, the waste from the various cool stores has been very light.

The Apple market

is keeping a very steady tone, and prices ruling are as follows:—Crowns and Stewarts of good quality and green up to 9/- per case, Granny Smith up to 10/6, colored Crowns from 6/- to 8/-, according to size and quality, Jonathans of good pack and color up to 7/6, and a few odd 8/-, smaller from 5/-. Delicious seem to be scarce, as for good packs of choice being in demand for some time 9/- and 10/- per case, and in the writer's opinion, providing the growers do not rush or over supply the market will finish up very well, considering the general financial position.

TOBACCO RESEARCH.

Grant for Investigation of Problems.

Senator Daly, Minister in Charge of Development, has announced that the Commonwealth Government will provide £3,500 annually for three years for investigation into tobacco problems. A similar sum has been provided by the British Australasian Tobacco Company, and other manufacturers are being being asked to contribute.

The investigation, said Senator Daly, would cover determination by exhaustive tests: (1) of the smoking quality of the leaf, with a view to improving its quality and aroma; (2) for the location of districts where tobacco of satisfactory aroma can be grown; (3) to treat diseases, particularly blue mould. The work would be controlled by a small executive committee with headquarters at Canberra.

Stating that there was a boom at present, Senator Daly issued a warning to people against rushing into planting. Good prices prevailed only for the best leaf, he said, and prices were not normal. At the rate of the industry's expansion, low-grade leaf would soon be unmarketable.

AMERICAN APPLE CROP.

For the entire United States, the official Apple forecast is 211,076,000 bushels, of which 115,089,000 bushels are expected to make up the commercial crop. Of the forecasts of the commercial crop of the United States, the various important Apple States show the following:—New York, 4,843,000 barrels; Pennsylvania, 1,525,000; Illinois, 2,075,000; Michigan, 1,574,000; Virginia, 4,200,000; Idaho, 1,480,000; Washington, 8,520,000; Oregon, 1,209,000; California, 1,980,000 barrels. (Calculate three bushels to the barrel.)

THE WILLIAMS PEAR.

Historical Data. ∴ Experiences in Australia and South Australia.

(By S. J. Perry.)

IN THE COURSE of his interesting address on fruit export before the Southern Victoria Fruitgrowers' Association, Mr. S. J. Perry, Chairman Victorian Exporters' Handling Committee, included some valued information regarding the Williams (Bartlett) Pear. Owing to pressure on space it was not possible to publish this information in our August issue: the information is as follows.

History of the Williams Pear.

According to Mr. F. R. Durham, Secretary of the Royal Horticultural Society, London, the Williams Pear originated at Aldermaston, in Berkshire, from a seed which germinated a few years before 1770. The garden in which the first tree grew belonged to a Mr. Wheeler, in 1770, and he disposed of the garden (and tree) in that year to a Mr. Stair, a schoolmaster, who said that the tree was then a very small plant. Mr. Richard Williams, a well-known nurseryman of Turnham Green, Middlesex, subsequently obtained scions and propagated the tree in 1816, when he sent some fruits to a meeting of this Society, the variety had been planted in many gardens around London, and was known as Williams' Bon Chretien. In 1818 the original tree was still alive, although the garden had again changed hands.

As early as 1797, it was introduced to America by James Carter, of Boston, for Thomas Brewer, of Roxbury, Massachusetts. In 1817, Enoch Bartlett became possessed of Brewer's Roxbury estate and, not knowing the true name, he allowed the Pear to go out under his own with the result that it is known to this day in America as "Bartlett."

Mr. Perry referred to the famous Somerset shipment of 10,000 cases of Williams, which left here in the steamer "Somerset," February, 1911, to be followed by 7,000 cases in the "Argyllshire," 1913. Both these shipments were landed in excellent condition, but since then the experience has been variable with Williams.

Williams Pears in South Africa.

Mr. Perry quoted extensively from South Africa's experience, his reference being the Science Bulletin No. 70. The report was a most exhaustive one, consisting of 120 pages, but the results were summarised, and the experiments of about two years established the following facts:—

1. That very great differences exist in the keeping qualities of W.B.C. Pears from all the different localities of South Africa.
2. Almost invariably the later pickings turned out more satisfactory than the earlier pickings.
3. In the majority of cases, storage at 34 deg. Fah. for a certain length of time resulted in the development in the fruit of an unpleasant muskiness.
4. In no instance were the flavor and keeping qualities in the cold-stored fruit so good as in the fruits ripened directly.
5. The heavier the soil in which Williams are grown, the better the flavor.
6. The keeping qualities are better in areas of less rainfall.
7. Japanese stocks are absolutely fatal, French seedling stocks best.
8. Pears in oiled wrappers reached full ripeness, and started to break down sooner than those in ordinary wrappers.
9. From 1920 to 1926—seven seasons in all—South Africa exported relative sizes 13 per cent. 2¾ in., 35 per cent. 2½ in., 48 per cent. 2¼ in., 4 per cent. 2 in.
10. Under present export conditions, five weeks may be considered the South African storage period for Pears, i.e., pre-cooling, voyage and discharge.
11. It should always be taken into account that the variation in temperatures on transport may considerably vary from that of these land experiments.
12. The mean monthly temperatures of the British Isles, during import period of bulk of South African Williams are:—January, 43.05; February, 45.34; March, 49.83.

INTERSTATE FRUIT SHIPPING.

Melbourne-Sydney Trade.

To improve the facilities for sending fruit and vegetables by sea from Melbourne to Sydney, additional facilities have been provided.

Already arrangements exist for early deliveries of fruit and vegetables at Sydney each Monday morning.

The Australian Steamships Pty. Ltd., 35 Market-street, and the A.U.S.N. Co. Ltd., 467 Collins-street, now advise that in addition to the foregoing it is their intention that steamers sailing from Melbourne 5 p.m. on Tuesdays, will commence discharge at Sydney, weather permitting, 7 a.m. Fridays, in order that consignments may be available for that day's market. With the service being conducted by modern steamers, which maintain a regular service, excellent stowage is offered in well-ventilated 'tween decks, and further, the most up-to-date methods of handling fruit by trays is carried out. This new accelerated service was inaugurated by the s.s. "Mareeba" (A.U.S.N. Co. Agency), leaving Melbourne on Tuesday, August 25, followed by "Time" (Howard Smith Ltd. Agency), September 1, "Mildura" (A.U.S.N. Co. Agency), September 8, "Mundalla" (Howard Smith Ltd. Agency), September 15, and regularly each Tuesday thereafter. The current rate by steamer is 15/- per ton, or 7½d. per bushel case. The sailing dates and other particulars may be obtained from the daily papers, or from the companies mentioned.

BUS SERVICES IN ENGLAND.

An interesting feature has been included in the new time-table of the London & N.E. Railways, indicating some 380 stations which are served by bus connections to various places. Details of this service are just to hand from the World Tour and Travel Department of Burns, Philp Pty. Ltd., 312 Collins-street, Melbourne.

In addition to its efficient rail and bus services, it will be remembered that L. & N.E. Railways controls the docks at Hull.

Victoria.

CHAMBER OF AGRICULTURE.

Sugar Embargo Opposed: Better Handling of Fruit Appreciated: Canadian Agreement Approved.

AT the recent quarterly meeting of the Chamber of Agriculture of Victoria, Mr. W. A. Webb presiding, many matters affecting primary industries were dealt with.

Sugar Embargo.

The Executive reported that despite strong representations made that the sugar agreement should not be renewed, the Commonwealth Government had, without giving Parliament an opportunity to express its views thereon, renewed the agreement for a further period of five years.

In reply to a communication on the matter, Sir George Pearce had stated that as the sugar agreement had been signed by the Prime Minister for the Commonwealth Government, it constituted a contract, and the only action that might be successful against it would be by appeal to the High Court, if, in the opinion of the legal advisers to the Chamber of Agriculture, there was a case against the agreement on legal grounds.

Fruit Marketing Methods.

The Executive reported that following negotiations with the Department of Agriculture and the various shipping companies and from the personal observations of members of the Executive, it was satisfied that fruit exports were now receiving much better treatment on the wharves than has been the case in past years.

There did, however, still seem to be some fault in the refrigeration systems on some boats, but this was a matter into which further investigation was being made.

At the instance of Mr. Fankhauser, the Executive Committee's report was received, and the fact that fruit was now being more carefully handled was noted with appreciation.

Canadian Agreement.

Col. Merrett then moved that the Federal Government be heartily congratulated on the splendid treaty which it had completed with our sister dominion, Canada. The provisions of this treaty will be of advantage to primary producers throughout Australia, but they will be of distinct benefit in connection with the sale of canned and dried fruits and other particular lines of Australian produce.

Mr. H. Hill seconded the motion, which was carried unanimously.

Railway Freights and Fares.—The Chairman of the Victorian Railway Commissioners (Mr. H. W. Clapp), recently addressed a meeting convened by the Central Council of the Melbourne and Metropolitan Progress Association, setting forth why a reduction in freights and fares was impossible.

This address has been published in pamphlet form and is obtainable from the Railways Department.

ADVERTISING AUSTRALIA IN GREAT BRITAIN.

Detailed information of the work being conducted by the Australian Director of Trade Publicity in the United Kingdom (Mr. H. E. Hyland), are to hand from the Minister for Markets (Mr. Parker Moloney). The report gives information regarding window displays, exhibition shops, vans bearing posters, newspaper publicity, and motion pictures.

This publicity work is favorably commented upon.

RIDLEY & HOULDING
Covent Garden Market
LONDON
Specialists in Australian Fruit.
Solicit consignments of Apples, Pears, Etc.
Our record of over 30 years' standing in the handling of Australian fruit, with satisfactory results, is a recommendation for growers to ship their fruit to our house.
Representatives—
International Fruit & Mercantile Company Ltd., Melb., Vic., Australia; and A. J. Walshe & Co., Hobart, Tasmania.

THE
FRUIT WORLD ANNUAL
& ORCHARDISTS' GUIDE
For 1932
will shortly be going to press.
Reservations for Advertising Space now being Received.

J. G. MUMFORD
(Established 1906)
Fruit & Vegetable Salesman
Account Sales Posted Daily
APPLE EXPORTER
"Fruit Exchange,"
449-451 FLINDERS LANE
and
No. 35 Wholesale Fruit Market.
MELBOURNE
Reference—Satisfied Growers in all States

MANCHESTER
(via The Ship Canal)
Nearest and Cheapest Port and Distributing Centre
For Over 200 Towns and a Population of 12 Millions
For Particulars re Steamship Services, through forwarding rates etc., apply to:
Telegrams & Cables: "Portoman," Sydney
Captain W. J. Wade, 8 Bridge Street, SYDNEY

FRUITGROWERS' COOL STORES ASSOCIATION.

At the quarterly meeting of the Fruitgrowers' Cool Stores Association on August 20 (Mr. A. E. Hocking presiding), it was decided, at the suggestion of the Chief Railways Commissioner (Mr. Clapp), to investigate the possibilities of the manufacture of sweet cider.

Messrs. E. H. Hatfield, J. H. Lang, H. J. Willoughby, together with the President and Secretary, were appointed a sub-committee to enquire into the matter, and a resolution was carried appreciating Mr. Clapp's action.

Electric Power.

Messrs. Wilkinson and Farr, of the State Electricity Commission, explained the operations of the two-part tariff, also how the amended tariff recently put into operation would effect a saving to the various stores which had installed electric power as their prime mover.

Delivery of Fruit.

Regarding the complaint of high charges for the delivery of cases of fruit in Melbourne and suburbs, the Railways Department wrote stating fresh tenders would be called about September 30, and it was decided to write them again, drawing attention to the matter.

Tariff Reduction.

The Chairman reported that at a meeting recently convened by the Country Party, plans were laid for securing a reduction in the tariff. Mr. Hatfield was appointed to attend further meetings.

Interest on Loans.

It was decided to approach the State Treasurer and request that the interest on Cool Store loans be reconsidered and brought into line with the terms as agreed at the Premiers' Conference for the rehabilitation of Australia.

Cooling Systems.

A resolution was carried: "That the Government and individual Stores be asked to carry out experiments during the coming season to ascertain the wastage of weight in fruit under both the direct expansion and air circulation systems.

"Eat More Fruit" Campaign.

The chairman spoke of the endeavor being made by the Fruit Council to launch a propaganda campaign to increase the consumption of fruit. He had personally interviewed the managament of several large concerns, and Mr. Gibson had addressed the employees and the prospect was promising.

It was resolved: "That the sum of thirty pounds (£30) be made available from the Apple Campaign Fund for propaganda purposes."

CORRUGATED PAPER.

A letter is to hand from the Medway Corrugated Paper Co. Ltd., Blackfriars House, New Bridge-street, London, E.C.4, giving information regarding their corrugated paper for lining cases. The firm state they have an up-to-date plant, and can supply first quality corrugated paper at cut prices.

Messrs. Blyth Chemicals Ltd., 31 Queen-street, Melbourne, manufacturers of "Blue Bell" sprays, advise that the firm of Messrs. Gibbs, Bright & Company, are their agents in New South Wales, Queensland and Western Australia.

A Note of Warning to Most Fruitgrowers!

If returns have been such that you must
curtail expenditure on **MANURES** . .

Don't Omit Nitrogen

because:—

1. Nitrogen is the chief limiting factor in fruitgrowing.
2. Heavy Winter rains will have depleted the soil of nitrogen.
3. Nitrogen does help the set.
4. Loss of vigor and vitality through lack of nitrogen takes years to recover.

Therefore use some NITROGEN, and remember that

SULPHATE of AMMONIA

is the cheapest form of **NITROGEN** you can use.

Information and advice from:—
NITROGEN FERTILISERS PROPRIETARY LIMITED
360 Collins Street, Melbourne.
P.O. Box 235, Haymarket, Sydney

CHEERFUL COGITATIONS.

(By Willie Wagtail.)

Well, Mr. Editor, and how are you? It's a long time since I wrote, but I've been reading the "Fruit World" regularly, and although I've tightened my belt a few times I shall manage to keep smiling.

That's the only thing to do, y'know. Keep smiling! Be hanged to the blinkin' depression says I. If we all talk depression we'll all be depressed. Let's grin for a change. I'm waiting for the Tomatoes to come in so that I can save one up and have it over-ripe to throw at the next blighter who talks "depression" to me. I've thrown 27 coconuts so far and registered 27 hits.

Who's this J. P. Gibson I've been hearing about—the old boy who is 64 and feels like 23, and runs in Marathon races and has a swim every day. He seems a good lad. A bit wild in his youth, I hear—used to eat

Lions in Africa.

Now he's started on the Raisins, nuts and fruits for diet, he'll soon be swimming the Bass Strait so as to get among the Tasmanian Apple orchards. Jack Piggott, Ben Pearsall, and all the boys would be pleased to see him.

Here's an idea, what about a Marathon Apple eating contest? Jim Bailey, August Zerbe, Charlie Griffeth, Bill Keyes and George Douglas might all enter. Little Willie would be the timekeeper, with little Ernie Meeting as his offsider. Of course, I know Bill Ranger would want the contest to be with Bananas or Pineapples, but we must make a start somewhere. And if little Willie enters, he'll have to let out the hole in his belt again.

I always knew there was virtue in fruit. One had only to look at the honest faces of the growers at Harcourt when Jimmy Lang was pruning at the Feld Day, to realise that without Apples this world would be a weary wilderness.

But there's Raisins, too, don't forget. Of course, here and there some fellers try to beat the regulations and the Control Board, but this is probably more because of tight belts than to worry Mr. Balfour. What was I saying? Oh yes, Raisins. You see the Dried Fruit Board has a publicity van and to prove the virtue of Raisins and the laddie in charge, Mr. Marchant goes to Goulburn, and, not content with talking to the ladies and then going to the Methodist Church and St. Patrick's College, he must also go to the gaol. He's not the first feller to go to gaol after being mixed up with the ladies, but enough of that. Anyhow, the prisoners had a great time hearing about the Raisins. We don't believe the rumor that some of them got the pip—the prisoners, of course, not the Raisins.

Some of the poor fellers who were in the jug, while thinking about the Raisin puddings that mother used to make, got lumps in their throat as big as the lump on the conk of the feller I hit with a coconut for talking depression. It is reported that several of the prisoners weep silently every time they read the pathetic query: "Have you had your Raisin pie to-day?"

But that's not all the story. Oh dear, no! You see the Raisin publicity van, after leaving the gaol, rushed off straight to Canberra, and the next we hear is that the politicians were being regaled with the story of the virtue of Raisins.

Was there any subtle connection between the Goulburn gaol and the politicians at Canberra? We don't believe it.

In the first place the Mungana verdict had not then been announced, and then Raisins is Raisins—whether for the compulsory inmates of the Goulburn gaol or the legislators compulsorily at halls of legislature among the rabbits at Canberra.

We hope that on his next visit to Goulburn, Mr. Marchant won't get mixed up. Wouldn't it be too dreadful at the Goulburn gaol to say—"Good-day, Mr. —— Have you had your Raisin pie to-day? By the way, I remember seeing you at Canberra recently"—. Just as at Canberra on meeting a Member of Parliament he might say "I met you at Goulburn recently —— ?"

But these cogitations are discursive. What I must do is to rush off and buy some Raisins or Bananas or possibly a lettuce so as to keep me out of gaol and give me strength to rise, like Daddy Gibson, at 5 a.m. for my six-mile run and morning swim.

I was going to say something about that recent Interstate Conference, but I'll have to stop now, and will try to write again next month. By the way, did you hear the story about the Scotchman—

(That's enough Willie, we may find room for your nonsense next month, or we may not.—Ed. "F.W.")

FOR YOUR WINTER SPRAYING REQUIREMENTS

Place your order immediately at the nearest Shell Depot for your Winter supplies of Shell Redspray---the outstanding dormant-period Spraying Oil on the Australian market.

If you have not received a copy of the booklet, "Profitable Fruit Spraying," The Shell Company Ltd. will forward one on request.

SO.10.

"FRUIT BEST FOOD" CAMPAIGN.

Mr. J. P. Gibson's Thanks.

(The Editor, "The Fruit World.")

Dear Sir,—Allow me, through the medium of your valuable journal, to tender my hearty thanks to Mr. A. E. Hocking, President of the Victorian Fruit Council, for the yeoman service he has rendered me in launching the "Fruit Best Food" Campaign, being seized with the idea as a good one—and visualising the great possibilities of increased fruit consumption, he has entered wholeheartedly into the movement without anticipation of fee or reward—prompted solely by the good that would result to his Association and to the health of the community.

I would also like to express my great appreciation of your generous assistance in many ways, particularly for the publicity you have given to the movement in the "Fruit World."

I feel sure the various fruit interests of Victoria w' join with me in thanking you and Mr. Hocking for your good services in this campaign—which, with reasonable financial assistance, is going to prove a big asset to them.—Yours very truly,

J. P. GIBSON.

(It is a pleasure to be of service to Mr. Gibson in this matter, Already the "Fruit Best Food" Campaign, conducted voluntarily by Mr. Gibson, has been remarkably successful. We trust that sufficient financial support will be accorded to launch a big movement.—Ed. "F.W.")

Play fair, be square, and you will find more sport in living, and less fear of dying.

AUSTRALIAN FRUIT IN GERMANY.

Hamburg Received 600,000 Cases of Apples and Pears—Long Extension of American Apple Season—Glut of Soft Fruit—Higher Duty Against Australia Affects Sales—Tasmanian Apples Praised.

SOME INTERESTING COMMENTS on Australian fruit in Germany are given by Messrs. Timm & Gersternkorn, of Hamburg. Writing on July 2, when offering the last of the direct Australian consignments (including 18,000 Tasmanian Apples ex "Clan MacDougall"), the firm state that at the time there were 2,200 cases of American Apples competing: also enormous quantities of Strawberries were offering at low prices.

The fruit ex "Clan MacDougall" was somewhat ripe. The bulk of the Cleos., Jonathans, Scarlet Pearmains, King Davids, Spitzenburgs, and some Dunns were all more or less ripe. Even quite a portion of Sturmers showed considerable ripeness. Jonathans were heavily bruised, and showed internal breakdown. Ripe fruit and the sizes 2¾ in. and 3 in. were neglected as compared with other sizes and less ripe fruit. The sale of this fruit was also adversely influenced by the prices ruling in Rotterdam and Bremen for fruit ex "Turakina," which was reported to be heavily affected by brown heart. Though the fruit ex "Clan MacDougall" showed only very occasional traces of this defect, the reports from Rotterdam and Bremen were of some consequence. The American offerings consisted of Winesaps: all showed more or less waste, and could not be disposed of at prices asked for them.

The best sizes at this time of the year are 2¼ in. and 2½ in.

Prices:—Jon., 4/6 to 9/3; Cleo., 5/- to 9/-; Dunns, 6/- to 8/6; Sturmer, 5/- to 9/-; Five Crown, 5/6 to 6/6.

Empire Preference

—is now more than a political catch-phrase. It is business in £ s. d., and Australia can build trade on the markets of the Empire that will bring in the tide of prosperity. We must not expect the full benefits of tariff preference unless we meet the requirements of the Empire buyer and deliver the right goods packed in the right way.

Each year upwards of twenty million packages of Australian products are wire-strapped for safe transport with Gerrard Wire-seal Strapping. The small additional cost gives a guarantee of safe transport and buyer-satisfaction.

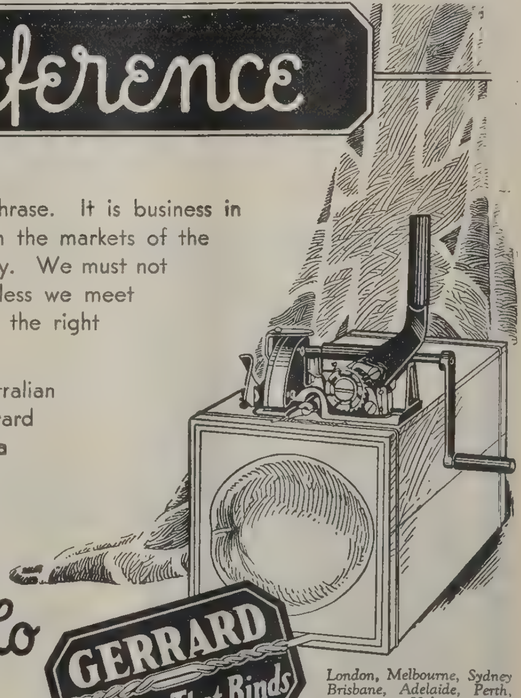
Our special packing service men are at your disposal without cost or obligation.

Gerrard Wire Tying Machines Co PTY LTD

119-125 HAWKE STREET, WEST MELBOURNE.

GERRARD The Tie That Binds

London, Melbourne, Sydney
Brisbane, Adelaide, Perth,
Launceston, Hobart
Wellington



The 1931 season for Australian Apples was handicapped by the long extended season for American Apples. The last major sale for American Apples was on June 11—only three weeks before the close of the Australian season.

Until the end the American fruit was in remarkably good condition, and it was difficult for Australian fruit to meet this competition successfully.

Further, American Apples enjoy the advantage of a lower duty, which is about 1/7 per case less than for Australian fruit. In other words, the lower tariff on American Apples gives this fruit a margin of 1/7 over Australian fruit.

Moreover, weather conditions were not too favorable during the present season. The cool early spring retarded the growth of domestic fruit, so that when warmer weather came there was a glut of soft fruit. The total figures for the 1931 season of Australian fruit at Hamburg were: 548,300 cases Apples, 42,700 packages Pears, of which the quantities sold at auction were 323,500 cases Apples and 36,300 packages Pears.

Concluding, Messrs. Timm & Gerstenkorn state that the fruit arrived throughout the season generally in good condition. Its quality was average to good. Tasmanian Apples merit special mention as in our opinion their quality has been better this season than during any previous season that we can recollect. Western Australian Apples have been somewhat disappointing as to quality this season. Jonathans, more particularly Western Australian Jonathans, proved rather perishable. Internal breakdown was a very frequent defect, and we know that many buyers of Jonathans lost heavily on that score.

SHOW VISITORS.

All readers who may visit the Royal Agricultural Society Show at Melbourne during the period September 17-26, are cordially invited to visit Victor Leggo & Farmers Ltd. Stand, 37 Lennon-avenue, where they may inspect a complete range of chemical products, including many of the well-known "Vallo" sprays.

There is one vital aspect of orcharding to which science has been applied, and which has proved of inestimable value to orchardists. This is the realm of spraying fruit trees. In fact, it is safe to say that scientifically prepared spraying mixtures of standard quality not only relieve the growers of much anxiety, but have made their business more remunerative than ever.

In this respect, much credit is due to Messrs. Victor Leggo & Farmers Ltd., for their enterprise and skill.

The following is a list of the principal sprays which interest the orchardist:—Arsenate of lead, nicotine sulphate 40 per cent., lime sulphur wash, prepared white oil, red spraying oil, Bordeaux mixtures, improved spray spreader, calcium arsenate, atomised sulphur—paste, atomic sulphur—powder, etc.

Spraying is a weapon of defence against the growers' insect and fungoid foes; it is also an insurance against loss. To obtain clean, bright fruit, effective spraying must be done with the right materials at the right time.

These spraying compounds are not the only activities of this progressive firm, for, in addition, they manufacture and handle all kinds of chemicals and materials used in manufacture.

Careful chemists are employed at their works at Yarraville, with well-equipped laboratories and every ingredient or compound comes under the most searching examination. All their products are sold under the well-known "Vallo" brand, which brand has been tried and proved entirely successful at the hands of practical orchardists.

The head office of the company is at 218-222 Queen-street, Melbourne, and their selling agents in Australia, Tasmania and New Zealand, may be found in all main fruitgrowing centres.

FERTILISER FOR CITRUS TREES.

Early Spring Dressing Advisable.

As CITRUS TREES are evergreen and more or less active right through the year, they should receive a dressing of manure twice annually, the first near the end of winter or early spring and the second about three months later. The applications will then be timed so that the plant-food will be available at the commencement of the two main growths in the trees.

In the manuring of citrus trees nitrogen appears to be the most important constituent. The following mixture is recommended by the Fruit Branch of the N.S.W. Department of Agriculture:—Sulphate of ammonia 6 cwt., superphosphate 3 cwt., sulphate of potash 1½ cwt. Mix all together well, and apply 1 lb. of the mixture (up to 20 lb.) per tree for each year of the tree's age; thus a 7-year-old tree will receive 7 lb.

The fertiliser should not be placed close to the butt of the tree, but should be spread out well beyond the outer fringe of the foliage. It should be worked in with the plough, cultivator, or forked hoe, and a small area only should be spread out at a time so that the fertiliser can be worked in before it is washed away by rain. Where time will permit, one of the best ways of applying fertiliser is to spread it just prior to ploughing. Care must be taken to see that the fertiliser is not in lumps, but is evenly distributed.

ORANGES IN N.S.W.

Big Sales by Railway Department.

Early in July it was announced that the Railways Department had sold its millionth Orange.

Since then sales have been maintained on a satisfactory basis.

Margetson & Co. Ltd.
Fruit Importers and Salesmen
30 James Street and James Street Warehouses,
11 Neal Street,
COVENT GARDEN, LONDON, W.C.,
and at Jamaica House,
9 and 10 Botolph Lane, London, E.C., and
56-58 Stanley Street, Liverpool.
Sales by PRIVATE TREATY.
Prompt Returns and Settlements.
Tel Add.:—FRUTERO, LONDON.
MARGETSON, LIVERPOOL.
Head Office:
Covent Garden Market, London, W.C.
Bankers:
Lloyd's Bank Ltd., Law Courts Branch, Strand, London, W.C.
Shipping Nos.: 431 and 432.

CITRUS CULTURE IN SOUTH AFRICA.

We acknowledge having received a book entitled: "The Culture of the Orange and Allied Fruits," written by H. Clark Powell, Professor of Horticulture, University of Pretoria, Pretoria, South Africa. This book contains over 350 pages, and is splendidly illustrated.

In the preface the author states that the citrus industry in South Africa and Southern Rhodesia is of recent development, and is expanding rapidly. For stabilisation of the new industry there must be an improvement in cultural practices as well as more co-ordinated action in relation to the marketing of the crop. The aim of the book is to cover these points.

The subjects dealt with include: The Origin, Spread and Commercial Significance of Citrus Species; Citrus Varieties; The Citrus Nursery; Establishment of a Citrus Grove; Bud Selection and Tree Records; Citrus Root Stocks; Fertilisers and Manures; Cultural Operations (including irrigation, cultivation, alkali, pruning and top working); Judging Citrus Fruits, Picking and Packing; Marketing and Organisation; Diseases and Their Control Through Fumigation and Spraying; Citrus Industry in West Indies, British Honduras, Palestine, Cyprus, Florida and California.

There are 83 illustrations showing all phases of citrus culture, also two maps, one showing the Orange-growing countries of the world and the other the distribution of citrus trees in the Union of South Africa.

Herbert Wilson
Pty. Ltd.
Wholesale Fruit Merchants
and
Commission Agents

Nos. 1 and 10 Wholesale Fruit Market
Melbourne.

Accredited Agents for Victorian Central Citrus Association and Affiliated Association.

Bankers:
National Bank of Australasia.
(Western Branch)
Melbourne.

City Telephone
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Tasmanian Apples

Orders for Apples carefully handled and undertaken for all Overseas & Interstate Markets.

E. R. COTTIER Pty. Ltd.
Temple Place, Macquarie Street
HOBART - - TASMANIA
Tel. add. "ERCOT," Hobart.

Consignment shipments solicited on behalf of leading Fruit Brokers and Salesmen throughout England and Continent.

T. STOTT & SONS
Fruit Merchants
Established 1882

A Trial Consignment solicited from Growers in all States.

Prompt Settlement.

26 New Wholesale Fruit Market, Melbourne

The book is altogether a valuable production, coming as it does, from such an authoritative source. It is, in fact, No. 8 of the South African Agricultural Series issued by the Central News Agency Ltd., P.O. Box 1033, Johannesburg, South Africa, at the price of 21/-, postage extra.

NEW COMPANIES.

J. Gunn & Co. Pty. Ltd., fruit and produce merchants. Registered office: 32 Main-street, Ballarat. Capital, £10,000 in £1 shares. Directors: William Albert Watkins, Alfred Thomas Young and George Carr Davies.

Western Fruit and Produce Co. Pty Ltd. Registered office: Market-square, Armstrong-street, North Ballarat. Capital, £5,000 in £1 shares. Directors, Elizabeth Bradby and Gladys Bradby.

"Clensel."—Mr. Bruce Anderson, the Australian representative for "Clensel," advises that the Tasmanian representative for this product is now Maxwell Foster, 29 Cedric-street, North Hobart. Inquiries from growers regarding "Clensel" will receive prompt attention.

MILDURA SHOW.

Excellent Display of Dried Fruits and Citrus.

HE ANNUAL SHOW of the Mildura Horticultural and Agricultural Society at the end of July, was very successful. The show ran for two days. Dried fruits and citrus predominated: there were also classes for poultry, pigeons and domestic art.

Mr. F. Skinner, of Koorlong, won the Victorian Dried Fruits Board cup for Sultanas, and S. Swingler the cup for Currants. The prize for 28 lb. box Lexias was won by J. H. Jackson; 56 lb. box Sultanas, F. Skinner; dried Apricots, W. Meredith; Peaches and Pears, H. Midgley; Prunes, Figs and clusters Irymple Packing Co. Other prize winers included:—J. Bugno, H. Young, G. Maddams, J. McManus, C. Dennett, S. Bodle, S. R. Mansell, Miss Couve, W. E. Hurst, T. Cock. The judges were Messrs. E. S. Creaton, A. V. Lyon and T. A. Stevenson.

In the citrus section, Merbein won the district exhibit, with 25 distinct varieties, Mildura with 13 varieties being second. The Irymple Packing Co. had an excellent non-competitive exhibit.

For best collection of citrus, the prize was won by Capt. D. B. Halhed, Merbein, only half a point ahead of the old Mildura Estate. For best packed case of Oranges (not open to packing sheds)—prize donated by Mr. V. L. B. Roberts—the prize went to P. A. Hoyle, with F. Naughton second, and Miss E. Jary third. The Gerrard Wire Tying Co., presented a rose bowl for best two cases of Oranges packed for export (one wrapped): this was won by Irymple Packing Co.

Prize winners in the other sections for Oranges, Lemons and Grapefruit were A. R. Smart, J. Lochhead, Miss M. Hugh, G. E. Burrough, W. H. Hiscox, C. W. Joslyn, Mrs. M. I. Hollick, Creaton and Hollick, H. O. Symons, R. K. Rodwell, F. G. Lloyd, R. D. Hollins, F. S. Taggart.

In the dried fruits section, favorable mention was made of the Johnson dip. A model of Little's Dehydrator attracted attention. The Shell Co. had a neat display of spray compounds.

The school work and cookery provided excellent exhibits.

Altogether the show was greatly appreciated, and much credit is due to the organisers of the exhibition.

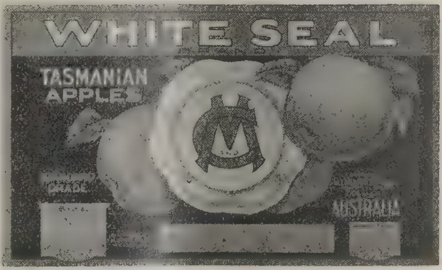
4

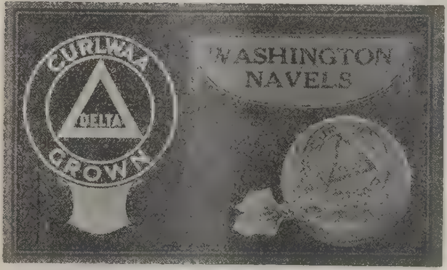
- ● **good fruit**
- ● **good grading**
- ● **good packing**

Good Points

and

● A GOOD LABEL


WHITE SEAL
TASMANIAN APPLES
GRADE
AUSTRALIA


CURLWAA
DELTA
CROWN
WASHINGTON NAVELS

Display at Royal Agricultural Show.

Our Labels will be on view in the main entrance of the Administrative Building during the period of the Royal Show.

Inspect these Labels and judge the quality of our work for yourself.

Our office is right in the City, at 505 Little Collins Street, close to William Street tram, which runs to the Show entrance. Call and see samples and new designs available for selection.

When the best Labels are a very profitable investment and not an expense, why not use the best Labels?

MASON, FIRTH & McCUTCHEON Pty. Ltd.

Leading Label Designers and Colour Printers

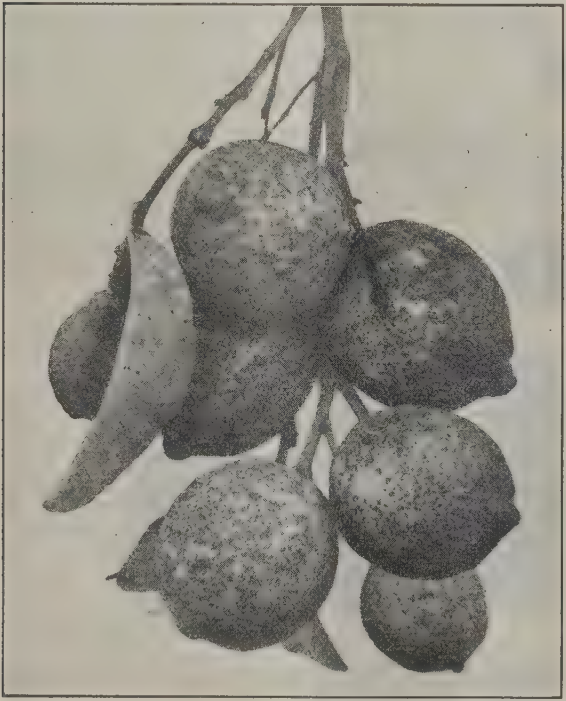
505-9 LITTLE COLLINS STREET,——MELBOURNE, C.1.
Established 1853

Insect Pests and Fungoid Diseases.

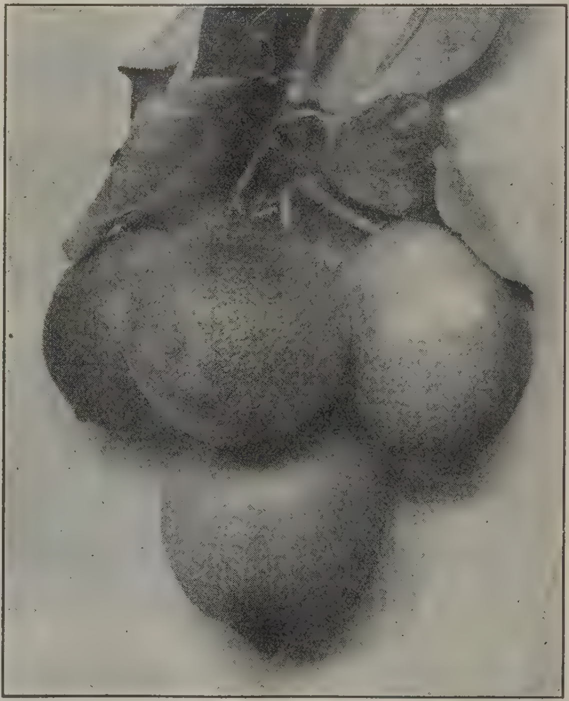
Control is Possible by Scientific Methods.

IT IS NOW ABUNDANTLY CLEAR that the scientist is the friend of the fruit producer. Not only is this statement true as regards soil analysis and manuring, but in particular to the essential work of spraying to achieve pest control.

Since its organisation in 1907, the California Spray-Chemical Company has made much of scientific research. Large investments in money, effort and time have been made. Those who have directed the policies of the company, have never been satisfied merely to produce and sell high-grade insecticides and fungicides, but have constantly endeavored to develop more economical and effective methods of controlling pests, preventing their ravages, and checking the losses they cause.



Before spraying with Volck.



After spraying with Volck.

Important Research Work.

The Research Department, headed by William H. Volck, has made many valuable contributions toward the advancement of economic entomology. For research in problems of citrus and deciduous pest control, special laboratories and extensive test plots are maintained in Southern California, the Pacific North-West, and other important horticultural districts in the United States. Here scientists of long experience in the problems of practical pest control, plan and supervise methods which will decrease costs and increase effectiveness of spray operations.

The Research Department of the California Spray-Chemical Co. is credited with a greater number of valuable contributions to practical pest control than any other group of scientific men.

Some six or seven years ago, H. C. Pannifex & Co. decided to put on the market a new white oil which to-day is known so well as Volck. During this period, many tests both official and private, have been conducted, all of which definitely prove the superiority of white oils over other types of oils as used previously.

Just as H. C. Pannifex & Co. led the way in introducing a summer white oil, they now again lead the way in marketing a winter dormant white oil called Kleenup.

Kleenup can be combined with Nicotine Sulphate, Lime Sulphur, Bordeaux and Arsenate of Lead, and reports which have come to hand indicate that Kleenup is likely to be a healthy rival to Volck and Orthol-K.

The California Spray-Chemical Company have now been operating for over twenty-five years, and it is frequently said that over a quarter of a century's experience is put into every drum of Volck.

Entomologists Visit Australia.

Three years ago, Mr. D. D. Penny arrived from California to assist orchardists in pest control, and this was followed last year with a visit from Mr. Leo R. Gardner from the same company, and many growers have received much practical advice from these two scientific entomologists.

Manufactured in Australia.

Messrs. Pannifex & Co., of 26 Market-street, Melbourne, Vic., advise that Volck, Orthol-K, and Kleenup are now manufactured in Melbourne. Other lines being marketed by this firm are Ortho Arsenate of Lead, Spreaders and Bordeaux.

The following observations in regard to users of Volck are of interest:—

Nearly 90 per cent. of the winning competitors at the Fruit and Flower Show held in Melbourne on April 29 and 30, 1930, were users of "Volck." In a report published in the Melbourne "Age" dated May 23, the following appeared:—"Mr. R. E. Fowler, of Pomonal, has received word that his consignment of Jonathan Apples arrived at Glasgow in prime condition and topped the market." This consignment was "Volck" sprayed.

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

The monthly meeting of the Executive of the South Australian Fruit Marketing Association was held at Adelaide on July 31.

Present.—Mr. H. J. Bishop (Chairman), Messrs. M. G. Basey, E. W. Dearman, J. S. Hammat, R. Hale, D. W. Hannaford, F. B. James, R. O. Knappstein, R. B. Pritchard, A. O. Petersen, J. B. Randell, G. Selth, P. R. B. Searcy, R. Willsmore, H. N. Wicks, and Secretary.

"Size or Count."—Mr. Hale asked what was the position in regard to branding Apple cases, whether the "count" could be used in lieu of "size." He stated he had to brand both the "count" and "size," while the provision of the Commerce Act read "count" or "size." Mr. Quinn (Chief Horticultural Instructor) stated that there had evidently been some misunderstanding in regard to the matter, as the Act provided for "count" or "size," therefore, either could be used. At the same time, it was considered by members, and this was confirmed by reports from London, that buyers preferred the "size," and not the "count."

Correspondence.—Letter from Major Owen, manager of the Aberdeen and Commonwealth Line, in reference to the complaint made in regard to rough handling of fruit shipped by the "Hobson's Bay" in April last, advising receipt of report from London, stating that no complaint was made in regard to the out turn of the fruit, and that it showed no evidence of rough handling.

Letter from Mr. J. B. Mills, stating that the reason for using the term "dump" case in the new agreement was owing to the fact that this case was used 100 per cent. in West Australia, 90 per cent. Tasmania, and about 70 per cent. in Victoria.

Pear Packages.—Mr. H. J. Bishop submitted for the inspection of members a Canadian ½ case, and also 2 trays, which he recommended should be used for packing Pears. It was resolved that the delegates recommend to the Melbourne Conference that this type of package should be approved as desirable for general export for Pears.

Pear Export.—It was resolved that the Secretary ascertain from shipping companies if they were in a position to advise whether any freight would be available for Pears to London during the last week in January, or the first week in February next.

Alteration of Rules.—Mr. G. Selth gave notice that at the next meeting he would move that the following alteration to the rules should be submitted to the annual general meeting in October next. Clause to be inserted:—

3a. Constitution.—"The Association shall be non-political, non-commercial and non-trading."

Addition to 61, after clause 2:—Add the following:—"Always provided that such funds shall in no way be used to prejudice or interfere with the trade of firms, companies, or individuals trading or in business in any form in the fresh fruit industry, whether members of this Association or not."

Research Sub-Committee.—The Research Sub-Committee reported that the manurial tests were proceeding satisfactorily, and it has been decided to carry out tests in regard to codlin moth control, probably in the same orchards where the manurial tests were being conducted.

Mr. H. N. Wicks.—On the motion of Mr. F. B. James, hearty congratulations were extended to Mr. Wicks on his election as Chairman of the Advisory Board of Agriculture.

ORCHARDISTS' FIELD DAY.

Success at Harcourt.

A HIGHLY SUCCESSFUL field day was held at Harcourt, Vic., on August 12, under the auspices of the Victorian Fruit Marketing Association, and a joint committee of the Harcourt Cool Stores and the Harcourt Fruitgrowers' Progress Association and the Harcourt Fruit Supply Co. Ltd.

There was an attendance of about 150 persons including local growers and others from Campbell's Creek, Sutton Grange, Faraday, Bendigo, Narre Warren, and the Mornington Peninsula.

Assembling at the orchard of Mr. H. M. McLean, an address on the "Biennial Cropping of Fruit Trees" was given by Mr. F. M. Read, M.Ag.Sc., Senior Horticultural Research Officer, Dept. of Agriculture.

(This address was on the lines of the illustrated article in the last issue of the "Fruit World.")

Mr. J. W. Bailey pruned a Jonathan tree, and subsequently a Rome Beauty, more freely than the two other demonstrators, Messrs. J. H. Lang and Henry Leversha. Mr. Bailey also pruned a Peach tree and answered many questions regarding the reason for the various cuts. The pruning operations were followed with great interest by both the older and younger generation of growers.

Mr. G. W. Brown, of Red Hill, gave an interesting chat on manuring. He raised the question: "Does it pay to manure?" After detailing the manures in check plots, he stated he was unable to trace commensurate financial benefits. He was now carrying out experiments along the lines suggested by Mr. Read.

The most important factor for the life and growth of the tree, continued Mr. Brown, was the texture of the soil. By using super. and nitrogen, a good green crop could be raised, even capeweed for turning under to add humus. This improved the moisture holding content of the soil and made cultural operations easier. Many growers had wasted a tremendous lot of money on manures. Deciduous trees stopped growing about December, yet growers frequently put on blood and bone then. This was washed out before the trees could use it. Manures could be absorbed by trees late in August or early September: the roots were active before the body began to move. Nitrogenous manures should be used intelligently: a certain amount of superphosphate, also probably potash applied at the wrong time and nitrogenous fertilisers would do more harm than good.

Mr. C. M. Griffeth, Vice-President V.F.M.A., and Mr. R. E. Boardman, told of the valuable work being accomplished by the Association.

In the evening, before a very large audience, Mr. A. A. Hammond, Senior Orchard Supervisor, gave an address on spraying to control orchard pests.

* * * * *

Among the visitors were Messrs. J. M. Ward, Supt. of Horticulture, F. Cave, S. E. Scott, and others.

* * * * *

Great credit is due to the organising committee at Harcourt for the successful arrangements made and the hope was expressed that a field day on the same lines would be organised next year.

Messrs. R. Cornish & Sons, who are members of the Wholesale Fruit Merchants' Association of Victoria are conducting their business at No. 5, Wholesale Fruit Markets, and substantial quantities of fruit are being handled.

AUSTRALIAN DRIED FRUITS.

Sales Value Double Those of Last Year.

The total value of the sales of 1931 season's export dried fruit to August 11 was £403,736, compared with £198,851 at the same date last year. These figures are exclusive of the additional recovery to producers arising from the exchange.

"Ship All Possible."

The Commonwealth Dried Fruits Control Board advises satisfactory demand from New Zealand and Canada. To meet the demand from these markets it will be necessary to ship all the dried fruit possible; and the outlet in export markets is very satisfactory, having regard to any fall in home consumption as the result of the domestic situation in Australia.

DRIED FRUIT PACKING SHED.

Cancellation Illegal.

F. A. James Wins Case Against Dried Fruits Board.

Frederick Alexander James, fruitgrower, of Berri, proceeded against the Dried Fruits Board in the Civil Court, Adelaide, for a declaration that an order purporting to cancel the registration of his fruit packing shed was unlawful and invalid. The case was heard by Mr. Justice Angus Parsons on August 4, who found that the Fruit Board had acted illegally in the purported cancellation. He made an order accordingly. Costs were given in favor of James. A stay of proceedings for 21 days was granted.

A.D.F.A. APPRECIATED.

Speaking at Red Cliffs recently, Mr. J. Stewart, President Red Cliffs branch of the A.D.F.A., told growers of his visit to the Barossa (S. Aust.) district, where 460 tons of Currants were produced, and of which about 400 tons were sold outside the A.D.F.A. This year the district crop of Currants would probably be around 700 tons. Mr. Stewart reported having told the South Australian growers of the advantages of being "inside" the A.D.F.A.; he said that an excellent feeling had been created by the earlier visit of Mr. Howie and Mr. Murdoch.

The meeting expressed appreciation to Mr. Stewart for his report.

APPLES ON PEAR STOCKS.

(To the Editor, "Fruit World.")

Dear Sir,—It is almost impossible to successfully work over Apples on Pear stock, but one instance has come under our notice where a Pear "Seckel" has borne fruit about a dozen fruits after being grafted three years—this was phenomenal and on the same tree were Baldwin and Esopus Spitzenburg Apples at the same time.

We have put dozens of Pear buds into Apple seedlings —though the bud lived, it didn't grow any further.

With reference to Quinces on Pears—we haven't tried this, but have worked for dwarfing purposes—Pears on Quinces, a certain variety of Quince—successfully.

Your correspondent, we think, would be only wasting his time and ruining the tree if he works the Apple to the Pear.—Your truly,

JOHN BRUNNING & SONS,

Somerville, 20/7/30.

POTASH PAYS

You Can Grow

EXPORT APPLES FOR 1d. A CASE

If You Know How

Here's one example:—

An apple-orchard in W.A. uses a fertiliser that gives 4½ lbs. of Muriate of Potash per tree. 5 years ago, in 1927, an extra 2½ lbs. of Potash were applied to one acre. Each year since, this acre has outyielded the rest of the orchard as follows:—

	Orchard Average	Extra Potash Area
1928	2.87 bus. cases per tree	3.78 bus. cases per tree
1929	3.04 ,, ,, ,, ,,	4.12 ,, ,, ,, ,,
1930	3.98 ,, ,, ,, ,,	4.60 ,, ,, ,, ,,
1931	1.42 ,, ,, ,, ,,	2.36 ,, ,, ,, ,,

From the EXTRA Potash area were picked 284 cases more than off the same area without the EXTRA Potash. 284 cases for 22/6 equals 1d. per case.

And what apples — they won a Gold Cup in London this year.

MAKE THIS AN EXTRA POTASH YEAR!

Muriate and Sulphate of Potash obtainable from all fertiliser merchants.

If you have any manurial problems, drop a note to Department A, at the address below for an honest opinion by men of scientific and practical experience.

Issued by Pacific Potash Ltd. (Australian Office) 711 O'Brien House, Young Street, Sydney.

SHEPPARTON IRRIGATORS.

Successful Year's Work.

Amalgamation With Citrus Growers Proposed.

IN submitting the annual report of the Shepparton Irrigators' Association, the President, Mr. J. G. B. McDonald said the year's work had yielded definite results. While the export of W.B.C. Pears was risky, the local market had to be relieved of the surplus; efforts were being made to have the Sales Tax removed from canned fruit and jam. The G.V. Brand was now registered and unauthorised persons using it were liable to prosecution. The financial position of the Association was satisfactory.

The levy was fixed at 9d. per ton on the motion of Messrs. Michel & Beckham.

Office-bearers were elected:—President, J. G. B. McDonald (unopposed); Vice-Presidents, N. Hanlon and M. G. Wright; Treasurer, A. Dobson; Secretary, N. W. Fairless; Executive Committee, T. C. James, V. Riley, J. J. Young, R. Marshall, W. Eliason, E. W. Beckham, and A. G. Stephens.

It was decided to support the comprehensive drainage scheme submitted by the shire council.

Pear Export.—This subject evoked much discussion. While the shipping of W.B.C. Pears was admittedly risky, it was felt to be worth while, because of the high exchange and the relief to local markets. Mr. A. E. Bailey suggested keeping the Pears longer in cool store here before shipping, to avoid American competition in British markets.

Mr. W. Young appreciated.—The President announced that the Northern Victoria Fruitgrowers' Association desired to make a presentation to Mr. William Young for his splendid services to the industry.

Citrus Growers Amalgamation.—On a report being received that the Shepparton branch of the Citrus Association desired affiliation, the matter was referred to the Executive with power to act.

The services of the President were favorably spoken of and £50 was voted to him.

PRIMAGE ON FRUIT WRAPPERS.

Now Completely Withdrawn.

Appreciated Activity by Victorian Fruit Marketing Association.

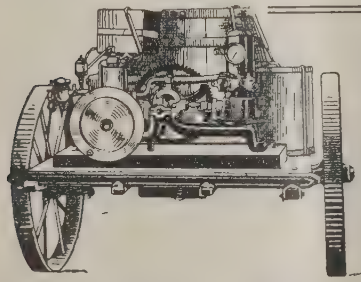
The Victorian Fruit Marketing Association is in receipt of a letter from Hon. F. M. Forde, Minister of Customs, per favor of Mr. W. C. Hill, M.H.R., to the effect that no primage is now being levied on fruit wrapping paper.

Following a request from the Tyabb Cool Stores, the Peninsula members on the Executive of the V.F.M.A. (Messrs. C. M. Griffeth and G. W. Brown), brought under the notice of the V.F.M.A. the fact that the Government proposed to increase the primage on fruit wrapping paper.

The Association got into touch with the Minister for Customs on this matter, also with Mr. W. C. Hill, M.H.R., asking that the primage be not increased.

The request was doubly successful in that the primage levy has been completely withdrawn.

Tasmanian Fruit Exporters.—The Tasmanian Overseas Fruit Salesmen and Brokers' Representatives' Association has been recently formed in Hobart. The objects of this Association are to co-operate with other bodies interested in the export of Apples and Pears overseas and to endeavor to assist in all matters for the betterment of the industry in general. The Hon. Secretary, Mr. H. Claude Little (Tasma House, 85a Collins-street, Hobart), advises that the Association will welcome the opportunity of cooperation with similar bodies interested in the welfare of the industry.



Bave-U Power Sprayer

Visitors to the Royal Show
You are cordially Invited to Inspect the

New Model "Bave-U"

At Our Stand No. 97 Smith Street

Full Information from—

RUSSELL & CO.
ENGINEERS
BOX HILL—Victoria

N.S.W. Agents—F. H. G. ROGERS, Fruit Exchange, Sydney

FRUIT TREES
PLANT
GOODMANS
FOR PROFIT

Best fruit always finds the best market—brings biggest prices!
Goodman's famous Trees are recognised everywhere as the best—heaviest yielders of first-grade fruit, bearing well in all parts of the Commonwealth.
Goodman's Trees are well grown, healthy, free from insect pests and true to label. Order Now—Apples, Pears, Peaches, Plums, Cherries, etc., etc.

..CATALOGUE AND PRICE LIST FREE..

C. J. GOODMAN
Picnic Point Nurseries,
P.O. Box 47, Bairnsdale, Vic.

W-McF.

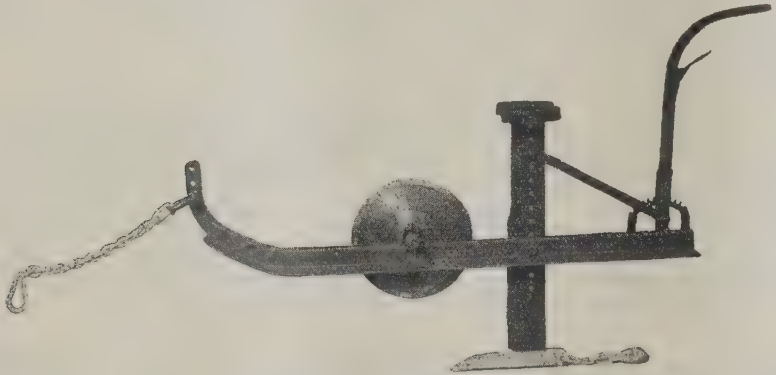
ADELAIDE CELERY IN MELBOURNE.

Large quantities of South Australian celery are being received in Melbourne, and these are being sold at good prices. The Melbourne representative of the South Australian Fruitgrowers and Market Gardeners' Association, Mr. C. W. McRostie stated that quantities and nett returns constitute a record. Growers are urged to send best quality, to put correct counts on crates, and to pack tightly. Celery should be properly blanched. The best packed crates weigh about 80 lbs. slackly packed crates under 60 lbs.

BANANAS IN NEW SOUTH WALES.

The Banana heart-rot disease (infectious chlorosis) has been proclaimed a disease under the N.S.W. Plants Diseases Act.

Heavy frosts in early August destroyed large numbers of Tomatoes in the Coff's Harbor district, but Banana plants suffered little damage.



Harvey Mole Drainer, for making effective drainage channels,—adjustable to a depth of 12 to 24 ins.

Banana growers in N.S.W. have decided to ask the Minister of Agriculture to apply the provisions of the Marketing Act to Bananas. Four district councils have been created by the Banana Growers' Federation—the Tweed, Brunswick, Coff's Harbor and Richmond.

DONCASTER, VIC.

Lemon growers at Doncaster have sent Lemons to Hong Kong, Shanghai, Kobe, and Yokohama. The fruit was washed and treated with paraffin wax. Reports are awaited as regards the condition of the Lemons on arrival at destinations.

Doncester Pear growers are pleased because of the success of their shipments to British and Continental markets this season. Mr. S. J. Perry has advised growers that some of the prices realised were per "Maloja" and "City of Dieppe":—Winter Cole, 13/- to 14/-; W.N., 14/- to 18/-; Packhams, 12/- to 14/-. Per the "Maloja":—Packhams did not carry too well, and prices ranged from 7/6 to 12/-. Other varieties on this vessel were:—W.N. "standard," 10/- to 17/-; "plain," 12/- to 15/-; Keiffers, 12/- to 14/-.

SOUTH AUSTRALIAN FRUITGROWERS & MARKET GARDENERS' ASSOCIATION.

Marketing Bill Debated.

At the monthly meeting of the South Australian Fruitgrowers and Market Gardeners' Association on July 31. Mr. W. H. Ind, presiding, arguments for and against the proposed Marketing Bill were advanced. It was decided to refer the matter to a sub-committee for special report.

As the citrus section was engaged in a publicity campaign, a donation towards expenses was granted.

It was decided to hold the annual meeting on September 25.

SUGAR INDUSTRY.

Bill to Restrict Production.

A Bill to restrict sugar production in Queensland was introduced into the Queensland Parliament on August 6.

Good displays of citrus fruits will be on view at the forthcoming Royal Agricultural Show.

The need for new and improved varieties of clingstone Peaches is emphasised in a report from Leeton, N.S.W.

The Canadian Trade Treaty is welcomed by Australia. This should mean increased reciprocal trade. All sections of the Australian fruit industry should benefit.

NEW TYPE OF FRUIT CASE.

Cardboard Container is Cheaper and Lighter.

A new type of fruit container has been introduced in New South Wales by a firm of cardboard box manufacturers, acting in conjunction with a paper pulp company.

It is estimated that the introduction of the new cases, which are made of cardboard, with corrugations, will bring about a saving of at least one-third of the present cost of wooden boxes. It is claimed that the new cases have exceptionally good carrying capacity, as the corrugation acts as a cushion. Though light, they are strong. In the course of a practical test a seventeen stone man stood on an empty case, which withstood the strain with ease.

Some of the co-operative societies on the irrigation areas are said to be most enthusiastic about the new fruit containers.

The death occurred at Orange (N.S.W.), on August 14, of Mr. George Frederick Giles, of Springside, Orange, a leading district orchardist. Mr. Giles, who was 63 years of age at the time of his demise, frequently won distinction as the grower of choice fruit, his products gaining many prizes at local shows.

TOMATO CULTURE.

Soils: Planting: Manuring.

TOMATOES are now grown in large quantities for table use and for processing. Greenhouse-grown Tomatoes have been on the main Commonwealth markets during August. For the limited quantities available the price has ranged around 20/- per half-case. The plants are usually raised from seeds sown in a hotbed in which a fairly even temperature can be maintained. The young plants should be gradually hardened before being planted out: they are tender and non-resistant to frost. After transplanting the young plants must be covered to protect from frost.

Enormous quantities of young Tomato plants are now raised commercially in nurseries, many growers finding it simpler to obtain plants in this way rather than having to raise the plants from seed.

The rows should be 4 ft. apart and the plants 3 ft. apart in the rows.

For succession crops, seed can be sown at intervals in the open ground when danger from frosts has ceased.

Train the plants to a single stem: tie the growth to stake or trellis. When about 4 ft. high pinch out the leader, and the lateral branches bearing fruit flowers will develop. Remove all superfluous growths and pinch out the leader of the fruit-bearing shoots. With some of the heavy bearing varieties, the growth can be trained on two (or at most, three) stems.

Preparing the Land.

Select new ground if possible, or ground in which other crops have been grown since the previous Tomato crop. Two ploughings and several cultivations may be necessary to bring the land to the required tilth.

Manuring is Desirable.

Most soils need to be enriched. Super at the rate of about 6 cwt. per acre is the average dressing. The "Commonwealth Agriculturist" states that for the first application, a mixture of six parts superphosphate to one of sulphate of ammonia would give better results than super. alone. The same quantity of this mixture should be applied. In some instances this six to one mixture is applied in two dressings, half at planting and the balance when the fruit has set. This latter is broadcast and worked into the soil by cultivation. Under irrigation, the liberal super. dressing at planting followed by 2 cwt. application of a nitrogenous fertiliser as a top dressing when the fruit has set, using up to 2 cwt. sulphate of ammonia per acre would probably be found to give best results. Give the growing plants good cultural attention and a moderate water allowance. Keep down all weeds and maintain the soil mulch in a loose friable condition.

The Tomato plant is liable to several wilts and diseases of a fungoid and parasitic character.

Generally controlled measures would be:—

Seed beds should be made on clean soil.

Crop rotation should be practised.

Select disease-resisting varieties. Affected plants should be removed and burnt.

Spraying with a Bordeaux mixture (4-4-40) is recommended for fungoid troubles and nicotine sprays for the eradication of damaging insects, aphides, etc.

V.C.C.A. OFFICE REMOVAL.

The office of the Victorian Central Citrus Association has been moved from Collins House to Temple Court (3rd floor), 422 Collins-street, Melbourne.

Tomato Plants

Strong Plants Raised and Grown in Sterilised Soil, thus taking every precaution against disease
Plant now the following varieties:

LARGE RED, SOUTH AUSTRALIAN DWARF, ORANGE PROLIFIC, BURBANK
and other varieties.

Grown from Selected Seed of our own saving.

Packed and sent anywhere. Prices for large or small quantities on application to:

Wm. Bone & Sons
880 Glenhuntly Rd., Carnegie, S.E.9., Victoria

Tomato Plants

IMPROVED LARGE RED, EARLIANA, BURBANK, IMPROVED BURWOOD WONDER, ORANGE PROLIFIC.

Grown from specially selected seed in cases containing 200 plants, 25/- per 1,000, packed on rail.

Cruickshank Bros.
Wholesale Nurserymen,
Wheatley Road - Bentleigh - S.E.14
Stand—Victoria Market, 36 E Shed

Tomato Plants
Well Hardened in New Cases of 200

LEADING VARIETIES.
Hutchinson's Special L. Red.
Burbank Improved.
Aust. Large Red. Burwood Wonder.
Velocity. Wilding's Prolific.
South Aust. Dwarf.
FOR LATE PLANTING—
Orange Prolific. Lysterfield.

PRICE ON APPLICATION.

HOWARD HUTCHINSON
Wholesale Nurseryman
"Fernshaw" Bambra Road Caulfield, S.E 8

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

NEW SOUTH WALES.

Sydney:
Chilton, F., City Fruit Markets.

VICTORIA.

Melbourne:
Cave, F., & Co., Melbourne.
Davis, J., Pty. Ltd., Wholesale Fruit Market.
Millis, A., & Sons, Wholesale Fruit Market.
Lister, G., Wholesale Fruit Market.
McLean, N. N., Pty Ltd
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Wholesale Fruit Market.
Renouf, R., Wholesale Fruit Market.
Ross, J. W., Wholesale Fruit Market.
Silbert, Sharp & Davies, Wholesale Fruit Market.
Stott & Son, T., Wholesale Fruit Market.
Tim Young & Co. Pty. Ltd., Wholesale Fruit Market.
Vear, F. W., 49 William Street.
Wilson, H., Wholesale Fruit Market.
Woolf, G., Wholesale Fruit Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Wholesale Fruit Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., Temple Place, Macquarie Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

GREAT BRITAIN.

London:
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
The Port of Hull, London and N.E. Railway. Rep., Burns, Philp & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
Johnson, T. S., & Co.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Astheimer, P. H., & Son, Fruchthof.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof.
Timm & Gerstenkorn.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.

GERMANY.

Messrs. J. H. Lutten & Sohn, Hamburg, writing under date July 2, report that the heavy arrivals of soft fruit, particularly Strawberries, weakened the market for Apples.

The first of the Californian Gravenstein Apples were expected at the beginning of August.

NEW SOUTH WALES.

Sydney, 21/8/31.

Apples, local, eating, Del., 7/- to 10/-, few to 13/-; R. Beauties, 5/- to 9/-; G. Smiths, 6/- to 12/-, few 14/-; Tasmanian, Demos., 6/ to 8/6; Croftons, 5/- to 8/-; Scarlets, Jons., and N.Y. Pippins, 5/- to 7/-; F.C., 3/6 to 7/-, few 8/-; Sturmers, 3/- to 6/-; other vars., 3/- to 7/- per bush. case. Bananas (genuine grades), nines and eights 14/ to 17/-, sevens 11/- to 13/-, sixes 7/- to 10/- case. Citrus Fruits.—Lemons, local, choice 4/- to 5/-, medium 3/-, small or inferior 2/-, irrigation 4/- to 5/-. Oranges, common 2/- to 4/6, Navel 4/- to 7/-, irrigation 4/- to 6/-; Mandarins, Emperors, 2/- to 5/-, special to 6/-; Thornies, 2/- to 7/- bush. case. Grape Fruit, 4/- to 8/- bush. case. Loquats, Mammoths 6/- to 8/-, commons 3/- to 4/- half bush. case. Passion Fruit, local 2/6 to 6/- half bush. case. Papaws, 5/- to 10/- case. Pears, Tas. Winter Coles, Winter Nelis and Jos., 6/- to 10/-; Vic. 6/- to 11/- bush. case. Pineapples, 7/- to 12/- case. Tomatoes, Q'land 6/- to 9/-, repacked to 14/-, local hothouse to 18/- half bush. case.

VICTORIA.

Melbourne, 28/8/31.

Apples, 5/- to 7/- a case; specials higher. Bananas (green), Queensland, nines and eights, 13/- to 15/- a double case; sevens, 11/- to 14/-; sixes, 8/- to 11/-; selected lines for country trade higher; rust-affected lines lower. Grape Fruit, 6/- to 9/- a case; faulty lines lower. Lemons, 2/- to 4/- a case; few higher. Oranges.—Commons, 3/- to 4/- a case. Mandarins, 4/- to 7/-. Navels, 4/- to 7/-; occasional sales higher. Poormans and Sevilles, 3/- to 6/-. Pines, 8/- to 10/- a double case. Passion Fruit, 8/- to 11/- a case; few specials in half-

FRUIT TREES

ONE GROWER SAYS—
"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

cases higher. Papaws, 5/- to 10/- a double case; green unsaleable.

The Melbourne market manager of the Federal Citrus Council of Australia reports:—"The citrus market was dull during the week, but with prospects of warmer weather sales should take place on a firmer basis, particularly for medium counts of Navel Oranges. Large-sized Oranges are forming the bulk of Navel consignments, and are difficult to clear. There was temporarily an improved demand for best Mandarins during the week, but counts over 270 are almost unsaleable. Small Sevilles and Poormans (counts 100 up) are not in demand, and prices have eased for medium sizes in these varieties. There has been no improvement in the Lemon position, but prices should improve, particularly for cured lines, within the next month or six weeks. Sales were as follow:—Navels, average standard, unwrapped, 68-75, 4/-; 84-96, 5/-; 112 up, 6/-; some 140-158 to 7/-; a few selected unwrapped lines, 5/- to 8/-; a few selected wrapped lines to 9/-, best counts; faulty lines and plains lower. Lemons, 3/- to 5/-; a few specials higher. Grape Fruit, plains, from 6/-; standards, 7/- to 10/-; some selected lines higher. Sevilles and Poormans, large (to 84 count), to 7/-; small not in demand. Mandarins, best counts to 8/-; a few specials higher; small (350 up), from 2/-. Commons, 3/- to 5/-; few specials, 6/-."

TASMANIA.

Hobart, 21/8/31.

Market fair, although quiet. Demo., 3/- to 5/-; S.T.P., 2/6 to 4/-; N.Y.P., 3/- to 4/6; C.P.M., 3/- to 4/6; F.C., 2/6 to 3/6; S.P.M., 2/6 to 4/-; H.C.P., to 3/-; S.P., to 3/-; spotty and inferior lots, 1/6 to 2/6 per case.

SOUTH AUSTRALIA.

Adelaide, 21/8/31.

Apples (eating), 9/- to 11/- case; do. (cooking), 8/- to 10/-; Lemons, 3/- to 4/-; Oranges (common), 4/- case; do. (blood), 4/- to 5/-; do. (navel), 6/- to 7/-; do. (poorman), 4/-; Passion Fruit, 18/-; Pineapples, 16/- to 18/- case; Tomatoes, 16/- to 18/- half case.

QUEENSLAND.

Brisbane, 21/8/31.

Tas. Apples, Jon. 7/- to 10/6 case, Demos. 7/- to 11/-, F.C. 7/6 to 11/-, S.P.M. 7/- to 9/-, S.T.P. 6/- to 8/-, D.C. 7/- to 9/-, Crofts 8/- to 10/-; Tas. Pears, W.C. 7/- to 10/- case, W.N. 6/- to 11/-, Jos. 7/- to 10/-, B.P. 5/- to 9/-, A.B. 7/- to 9/-, M.C. 6/- to 9/-, G.M. 6/- to 9/-; Vic. Apples, Jon. good quality, 9/- to 11/- case, others from 7/- to 8/-; Vic. Pears, W.C. 7/- to 12/- case, W.N. 8/- to 10/-, Jos. 9/- to 12/-, B.P. best 7/- to 8/1, faulty 4/- to 6/- case; Queensland Navel Oranges, large size 9/- to 11/- case, small 5/- to 7/-; Queensland Oranges, large 6/- to 7/-, small 5/-; Mandarins, Glens, large 12/- to 14/-, small 5/- to 9/-; Emperor, large 8/- to 11/-, small 3/- to 5/-; Ellendales, large 7/- to 8/-, small 4/- to 7/-; Waratahs, 4/- to 10/-; Thorney, 4/- to 7/-; Feutrels, 3/- to 5/-; Grape Fruit, 2/6 to 3/6 half case; Lemons, 1/6 to 2/6 half case; Passion Fruit, first grade, 4/- to 6/6; second grade, 2/- to 3/- case; Papaws, 1/- to 3/-, colored 3/6; Custard Apples, 3/- to 5/-; Pines, smooth, 2/6 to 5/-; South Aust. Lemons, 12/- to 15/- case.

WESTERN AUSTRALIA.

Perth, 19/8/31.

Apples, Dunn's Seedlings, dumps, 6/- to 10/- (others from 4/-); R. Beauty, 5/- to 9/6; Yates, 6/- to 10/6 (others from 4/-); G. Smith, 8/- to 15/-; Cleo., 6/- to 9/6 (special to 11/-, others from 4/-); Doherty, 4/6 to 7/6 (special to 9/-); other vars., 5/- to 14/6. Citrus.—Navels, flats 2/- to 5/6 (special to 7/-), dumps 4/- to 8/6 (special to 10/-); Lemons, 1/6 to 4/-; Mandarins, 4/6 to 8/6 (others from 3/-); Oranges, plain, flats 2/- to 3/6, dumps 4/- to 6/-; Passion Fruit, 9/6 to 10/6 half case.

MELBOURNE WHOLESALE FRUIT MARKET.

Owing to the cold weather during August, the demand for fruit at the Melbourne Wholesale Fruit Market was very weak, and prices generally low. Citrus formed the bulk of trade done, and prices for Washington Navels ranged from 5/- to 7/6 case. Lemons proved hard to dispose of at 3/- case, while common Oranges brought 3/- to 4/-. Seville and Poorman's ranged from 4/- to 7/-, Mandarins 4/- to 6/-, and Grapefruit from 6/- to 9/-. Pineapples, steady sale at 10/- to 12/-; Passion Fruit, 8/- to 10/-. Apples, 5/- to 7/-. Bananas, 9's, 8's, 7's, 12/- to 15/-; 6's, 9/- to 11/- double case.

The best selling line handled by some of the fruit merchants was South Australian Celery, which averaged 10/- to 12/- case. This line was of good quality, and the South Australian growers sent over upwards of 43,000 cases, all of which was disposed of at the above quoted prices. It has proved the best season for S.A. Celery growers for many years.

RETAIL FRUITERERS' ASSOCIATION.

THE monthly meeting of the Executive of the Melbourne and Metropolitan Retail Fruiterers' Association was held on August 6, there being a large attendance of delegates present.

The Secretary read a letter from the Chief Commissioner of Police stating that since the complaint about the great amount of thieving at the Victoria Market he had sent extra police there, with the result that many convictions had been obtained and that the department would do all in its power to combat the evil, which has been very rampant of late. Growers and retailers are being constantly robbed of goods, many horses and vehicles having been stolen also; some vehicles have been found minus the goods they contained, and at other times the horse and cart have been found, the harness and everything else movable having been stolen.

Some discussion took place in reference to some shopkeepers giving away goods to purchasers in their shops. One or two butchers have been giving away Cabbages, etc., with joints of meat; this greatly interferes with the neighboring shopkeepers who handle such commodities, and it was decided to bring the matter before the next quarterly meeting of the Victorian United Retailers' Council to see if some action can be taken to put a stop to this unfair competition. If a shopkeeper wants to be generous let him give a discount or something that will not be injurious to another business.

The proposal expounded by Mr. McCall, of Scoresby, at a recent meeting in reference to the limitation of hours for parking vehicles in the vicinity of the Victoria Market, with a view to the speeding up of the buying at the wholesale market, was discussed, and it was decided that no action would be taken in the matter at present.

PYSECT or PESTS?

—you can't have both!

Pysect Concentrate, the original British Pyrethrum Insecticide, definitely supersedes nicotine, arsenic and the older washes. More potent than nicotine, it is non-poisonous to warm-blooded animals and harmless to vegetation —even the most tender shoots. Colour and flavour of the fruit are not affected. No effect upon bees. Trees may be sprayed in blossom.

A one-solution spray, it mixes readily with water to form a perfect emulsion.

No soft soap required.

SHIELDS THE PLANT
PYSECT
DESTROYS THE PEST

Available from—
E. HOLROYD PAGE,
218 High Street,
MALVERN.

all nurserymen and Seedsmen, or direct from

J. A. GORE,
Agents for Australia,
Twyford House,
17 Castlereagh Street,
SYDNEY.

Postal Address—
Box No. 3043NN, G.P.O.,
Sydney.

Pysect
DEATH TO PLANT PESTS

CONCENTRATE
BRITISH PRODUCT

Distributors Wanted in all Districts.

Comments on the Retail Trade.

There has been no improvement whatever in the retail trade during the month, and shopkeepers are complaining that owing to the curtailment of wages of those people who are working, they are finding it more difficult every week to make ends meet. There has been very little alteration in the prices for fruit during the month, and the market has been amply supplied both with local and interstate fruit.

Oranges have been plentiful and cheap, and still the public are unable to purchase except in very limited quantities.

Most varieties of vegetables are extremely scarce, and consequently the prices are high. Cauliflowers have been sold as high as 12/- per dozen, Cabbages 6/-, Parsley 2/- per dozen, and almost every other vegetable at equally high prices. The retailer finds it very hard to sell them at a reasonable profit these depressed times. Potatoes, Onions and Swede Turnips have been cheap, but the former are on the rise now.

Market gardeners state that vegetables will be very scarce for the next couple of months, as during the recent very wet months there was practically no growth whatever. Beans of very good quality have been coming here from Queensland, but now that the weather is getting warmer over there they are not arriving in such good condition as formerly.

EDW. W. THOMPSON,
Secretary, Melbourne and Metropolitan Retail Fruiterers' Association.

NEW ZEALAND.

Dunedin (13/8/31).—Reilly's Central Produce Mart report prices as follow:—Apples, Jons., choice 6/6, 7/-, small 3/-, 5/-, others 4/-, 6/-, Sturmers, choice 7/-, 9/6, small 3/6, 5/-, cookers 5/-, 6/6; Delicious, 9/- to 10/6, small 4/-, 6/-. Pears, W. Coles, half cases 5/-; W.N., half cases 5/-; cooking, 2½d. Australian Navels, 12/- to 15/-, according to size; Poormans, 8/-, 10/-; Sevilles, 14/6. Australian Lemons, 13/-, 16/-. Australian Grapefruit, 10/6. Passions, Australian, 14/6, 17/-. Mandarins, 10/-, 14/-. Pines, 15/-, 18/-. Bananas, choice Samoans, ripe, 20/-.

VICTORIA.

Southern Fruitgrowers' Association.

At an Executive meeting of the Southern Fruitgrowers' Association on August 6, there were present Messrs. L. Pepperell (President), W. A. Webb, G. Fankhauser, O. White, W. A. Thiele, A. J. Leber, and J. W. Aspinall (Secretary). The President welcomed Mr. G. Fankhauser to the Executive. It was decided to send a letter of appreciation to Mr. G. Mock. Mr. Clapp, Chief Railways Commissioner, wrote thanking the Association for their appreciative letter. The Secretary reported having attended meeting when Mr. J. P. Gibson told of his rejuvenation and enthusiasm for fruit diet. Mr. W. A. Thiele was appointed to attend meetings of the Chamber of Agriculture.

VALLO VALLO

Fruitgrowers—Market Gardeners

DON'T FAIL TO CALL

At 36 Lennon Avenue

Should you be visiting the Melbourne Royal Agricultural Society Show

(SEPT. 17-26)

We welcome your inspection of "VALLO" SPRAYS, DUSTING COMPOUNDS, and other Chemical Products.

THOUSANDS OF GROWERS ARE REGULAR USERS

"Vallo" Sprays that Pay

A Reputation Built During a Period of Twenty Years Regular Service.

VICTOR LEGGO & FARMERS LTD

Agents all States. MELBOURNE

PERSONAL.

Mr. L. Strothers, of Curlwaa, N.S.W., acted as one of the judges at the recent Mildura show.

Mr. Marchant, publicity officer of the Dried Fruits industry, recently delivered an illustrated lecture to members of Parliament at Canberra.

Mr. J. P. Piggott, manager, Port Huon Fruitgrowers' Co-operative Co., who recently returned from abroad, is firmly of the opinion that unless the principle of Empire trade be adopted, the export market for fruit pulp will be lost and growers can only look to the local market to dispose of the crops.

Mr. J. W. Barker (Barker, Green & Parke) has just returned from a visit to England and the Continent. Mr. Barker speaks hopefully regarding the prospects for trade generally.

MR. H. G. COLOMBIE APPRECIATED.

Mr. H. G. Colombie is deserving of the thanks of the Australian Fruit Industry, particularly the Apple and Pear section, which he has so ably assisted to organise. Mr. Colombie was the prime mover in organising the Victorian Fruit Marketing Association, which has become firmly established and performing excellent service for the industry.

As Chairman of the Interstate Apple and Pear Export Conference in December, Mr. Colombie rendered good service, which was repeated when he presided at the first meeting of the Apple and Pear Export Council in August.

In visiting the other Australian States, Mr. Colombie has been of great service to the growers. In particular the South Australian Fruit Marketing Association, of which Mr. Colombie was the virtual founder, holds him in the highest esteem.

It may safely be said that in bringing growers and exporters together in mutual counsel to develop the industry, Mr. Colombie has performed services of lasting benefit to Australia.

P. & O. ESSAY COMPETITION.

Open to All Australian Girls and Boys.

PRIZES AMOUNTING TO £150 are being offered by the P. & O. Company for the best essays by Australian girls and boys in all public and private schools on the subject of "The Influence of Sea Transport on Australia from the opening of mail communication by steam to the present day."

Points will be allotted for literary merit, research, original treatment, the effects of oversea transport on industry, exports, colonisation, defence, and Imperial sentiment, spelling and legibility.

Essays are to be written in schools under supervision, and will be graded and judged according to the ages of the writers. An hour and a-half will be allowed for the actual writing. Arrangements can be made through any head master within the period from September 21 to October 3, and Messrs. Macdonald, Hamilton & Co., P.O. Box 386D, Melbourne (agents for the P. & O. Co.), will supply any additional particulars.

The occasion of the essay is the arrival in November of the R.M.S. "Strathnaver," the greatest electric passenger vessel in the world.

Sunday School Teacher: "What is meant by the saying: 'By their fruits ye shall know them'?"

Willie Snooks: "Greeks and Italians."

DOUBLED THE EGG YIELD!

Users' Tribute to Karswood

THERE'S nothing like a practical test to prove the accuracy of a manufacturer's claim for his product. Mr. Tapp's letter below describes how he gave Karswood Poultry Spice a hard test, and how it came through with flying colors. Poultry-keepers all over the country have made, and are still making, these tests—and the results are reflected in the constantly increasing sales of Karswood. Buy a packet and try it for yourself. But do not expect an immediate improvement. Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

Doubled Egg Production

Dear Sir,

I have a lot of fowls, and this season I am doubling my number. For the past two years I have been a user of Karswood Spice and can honestly say that I have doubled my egg production. I may state that when your Karswood Poultry Spice first came under my notice I gave it what I considered a hard test, viz., I had 12 pullets that had not laid. They were the same age I yarded 6 and fed them with wet mash (pollard) and wheat and Karswood Poultry Spice. These six laid five weeks before the other six that were fed on wet mash (pollard) and wheat without Karswood Poultry Spice, thus proving without doubt the benefit of Karswood Poultry Spice. This I have mentioned to my friends on various occasions here.

(Sgd.) W. H. TAPP,
St. Mary's, East Coast,
1st May, 1929. Tasmania.

MAKE THIS TEST.

Go to your local grocer, storekeeper or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a-dozen of your birds in accordance with the directions on the packet. Do not expect immediate results—Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

SUPPLIES.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½ lb. packet, price 1/-; 1 lb. packet, price 2/-; 7 lb. tin, price 13/-; 14 lb. tin, price 25/-; 28 lb. tin, price 48/-

KARSWOOD
POULTRY SPICE
INCREASES EGG-PRODUCTION WITHOUT FORCIN

Poultry Notes

Grit for Poultry and Chickens.

A fowl, instead of being furnished with teeth, like animals and human beings, wherewith to masticate food as a preliminary process of digestion, is furnished with quite a different contrivance, which, however, practically answers the same purpose as a man's teeth.

A man puts certain food into his mouth, and that food by mastication and by the addition of the saliva secreted, is reduced to a pulp, which is ready for treatment by the chemical process of the digestive juices in the stomach. The case of the fowl, however, is different: a hen swallows her food whole, it consists principally of grain, and that grain finds itself in the crop, which is really little more than an enlargement of the œsophagus or gullet. There the grain undergoes a process of softening, and then it is passed on to the gizzard, where it is "masticated."

The gizzard is really a sort of natural grinding-mill. Its walls are thick and tough, and inside it are sharp stones which cut into and assimilate the food. That is why poultry, by the aid of their natural instinct—that marvellous reasoning faculty of the animal world—swallow stones and other sharp objects.

These substances go, like all other things swallowed, first into the crop, but it is not until they pass on to the gizzard that they make any difference. Once there they fulfil a double purpose. Not only do they grind up the softened grain and other food into a homologous mass, ready to be chemically treated by the digestive juices, but they grind against each other and provide soluble mineral matter for the requirements of the bird's body.

Here it may be pointed out that a fowl should have a supply of grit of different sizes. It is a mistake to supply only one size; in order to make a perfect "mill"—a thoroughly effective grinding power—smaller particles of grit are necessary to fill the interstices between the larger pieces.

In supplying poultry with grit there need be no argument about the necessity for supplying it when poultry are kept in confinement, nor, indeed, when they are at liberty, if there are so many that they are likely soon to clear up all the suitable surface grit on a farm.

Points to be Kept in Mind.

First of all, grit must be sharp. You never see poultry swallow rounded pebbles. They generally take up a piece of grit and turn it round in the beak two or three times as if testing and examining it—as often rejecting it as swallowing it. Sharp pieces are preferred—and here let us say that when a sharp piece of grit has been at work in the gizzard and has been rubbed smooth by friction with other pieces it is no longer of any use, and is passed out of the system automatically.

Sharpness, then, is the first essential. Next to that grit must be hard. Unless it is hard it will crumble at once instead of "pulping" the food.

So sharp, hard grit is what a fowl needs. There is nothing like flint to give both properties: but flint varies in texture very much—some is round and blunt, whilst other samples are flat and sharp. The best flint is that which is at once rather disposed to roundness in shape, yet sharp withal. Poultry requisites suppliers now sell the right sort of grit very cheaply.

Black Leghorn Cockerel.—A typical pullet breeder. Note the beautiful lobe, also the white in tail, two very essential points in breeding exhibition pullets. The cockerel is the property of Mr. J. B. Salmond.

Mixing Dry Mash.

Question:

"Lupol" (Preston) writes:

I want to make up a growing mash for chickens a month old. I intend to use 10 lbs. wheaten bran, 32 lbs. wheaten pollard, 6 lbs. oaten pollard, 5 lbs. maize meal. How many pounds of meat-meal or buttermilk, and how many pounds of bone-meal would I add to the above? I intend to feed dry mash before the youngsters all the time.

Answer:

To your mash as constituted add 1 lb. of meat-meal and 2 lbs. of bone-meal. If dried buttermilk is substituted for meat-meal, add it to the mash at the rate of 5 per cent.

BANTAM NOTES.

A soft-fleshed, soft-feathered bird will always look much heavier than it really is, on the other hand a Game is usually heavier than it actually looks.

A bantam is approximately one-fifth the weight of the breed it is the miniature of.

September is an ideal month to set bantam eggs.

Mate five hens to one cockerel. If breeding for exhibition, single mate. One male can be changed from one pen to another.

Do not breed from wry-tailed birds on any account.

Jim ('phoning): "Hello! That Mary?"
"Yes."
"Dou you still love me?"
"Yes—who is it?"

PORT HUON FRUITGROWERS' CO-OP.

The annual meeting of the Port Huon Fruitgrowers' Co-operative Association Ltd., was held on August 28, at Hobart.

The annual report signed by the Chairman (Hon. W. H. Calvert, M.L.C.), states that the paid-up capital was £20,231; reserves amounted to £5,973; the profit and loss account showed a credit of £300/13/6. The value of land, building and machinery stood in the books at £37,560, after providing for depreciation, £12,034, of which £1,317/4/10 had been written off this year. Mr. J. P. Piggott had rendered good service whilst abroad. At least £500 per annum will now be saved and claims totalling £1,270 were secured.

SUGAR AGREEMENT.

At the Annual Conference of Fruitgrowers at Hobart recently, a resolution was carried, stating that the new Sugar Agreement was not in the best interests of Tasmanian fruitgrowers; further, that a proportion of the £110,000 calculated on a basis of the quantity of fruit processed should be made available in cash to the Tasmanian growers on a pro rata basis.

"FRUIT BEST FOOD" CAMPAIGN.

Under the auspices of the Victorian Fruit Council, Mr. J. P. Gibson, whose interesting story of rejuvenation was published in last month's "Fruit World," has been giving a series of addresses on the value of fruit as a diet. Mr. Gibson has addressed gatherings in factories, colleges, clubs, etc., and has created a profound impression. The people are beginning to realise that fruit is not a luxury, it is a complete and healthful food.

CITRUS FUMIGATION.

Demonstration at Red Cliffs.

A field day was held on Mr. A. E. Cameron's block, Red Cliffs on August 14, when a large attendance of growers witnessed a citrus fumigation demonstration by Mr. K. Muir, citrus officer for the district.

Mr. Muir urged growers to organise co-operatively to have their trees fumigated, seeing that the Department of Agriculture was no longer continuing this work.

A demonstration was given of the method of throwing the tents over the trees and releasing the gases. It was suggested that other field days be conducted to demonstrate citrus pruning, budding, etc.

"FRUIT WORLD" APPRECIATION.

To the Editor, "Fruit World."

Dear Sir,—Enclosed please find cheque £1/3/6, being subscription to June, 1933. Please accept my congratulations on your excellent publication; the articles published are both very interesting and instructive.

(Signed) THOS. A. FRANKCOMB.

Ranelagh, Tas.

ORANGES FOR CANADA.

N.S.W. Sends Late Valencias.

Over 8,000 cases of late Valencia Oranges were shipped from Sydney to Canada by the s.s. "Niagara" on August 20. The State supervising officer, Mr. E. D. Butler, states that the fruit was of excellent quality, well graded, wrapped, and packed.

Victorian Fruit Marketing Association.

A MEETING OF THE EXECUTIVE of the Victorian Fruit Marketing Association was held at the Commercial Travellers' Association, Melbourne, on July 31. There were present: Messrs. H. G. Colombie (Chairman), C. M. Griffeth and J. B. Mills (Vice-Presidents), K. Eagle, W. H. Carne, J. W. Bailey, G. Brown, W. A. Webb, F. R. Mellor, C. Parnham, F. Cave, A. S. Harrison. The Superintendent of Horticulture (Mr. Ward), was in attendance, also Messrs. W. A. Thiele, H. Clark, S. E. Scott, and the Secretary, R. E. Boardman.

Freight to Sydney.—A reply was received from Mr. Clapp, Chairman Railways Commissioners, stating he had already written unavailingly to the New South Wales Railways, requesting, in fruit carriage, the basis of 45½ cases to the ton (softwood cases) on N.S.W. railways (as on Victorian Railways).

Mr. Webb pointed out that metropolitan growers were now using the boats because of the attitude of the N.S.W. railways.

It was decided to write to the N.S.W. Railway Department, requesting uniform treatment with Victoria. A copy of the letter to be sent to Mr. Clapp. Appreciation for Mr. Clapp was expressed.

New Members.—The Chairman welcomed two new members to the Association, namely Mr. W. A. Thiele, Doncaster, and Mr. Clark, Harcourt.

Tariff Reform.—The President reported having attended in company with Mr. W. A. Webb and the Secretary, a meeting called by the Country Party to consider tariff reform. The meeting had a political color, funds being requested for the Country Party to pursue this objective. While admitting the urgent necessity for tariff reform, he believed that this movement should be a non-party one. in fact, the movement previously initiated by the Graziers' Association on broad lines, appeared to be more desirable than the meeting called by the Country Party. A valuable discussion followed, the need being stressed for tariff reduction, and for this objective to be pursued on scientific lines in co-operation with others interested. It was decided, on the motion of Messrs. Mellor and Bailey, that the President be requested to keep in touch with the movement initiated both by the Graziers' Association and the Country Party, and any others working along these lines.

Country Inspection.—Letter received from Superintendent of Horticulture, stating that instead of the suggested conference in Melbourne with inspectors, it would be better for district fruitgrowers to meet at local railway stations, together with the district inspector, and to then decide as to uniform standards for export fruit. Mr. Jost spoke appreciatively of the country inspection system; Mr. Mills said that last season the difficulties which had arisen in the interpretation of grades had been smoothed out owing to the vigorous activity of the Superintendent of Horticulture (Mr. Ward) and his evident desire to render best service. Mr. Ward had travelled long journeys of considerable inconvenience to settle matters in dispute. It was decided, on the motion of Messrs. Mills and Brown, that a letter be sent to the Minister for Agriculture in appreciation for Mr. Ward for his efficient work under last seasons' trying conditions regarding export, also expressing appreciation of Mr. Ward's suggestion for growers and inspectors to meet in country districts to arrive at uniform standards.

Temperatures and Export Details.—Mr. Harrison reported that while there appeared to be unanimity among exporters regarding temperatures for ships' holds during fruit export, there were other factors which should receive the attention of a Committee, which Committee could include not only V.F.M.A. members, but others connected with export. Mr. Brown spoke of the good work of Dr. Young, Council for Scientific and Industrial Research, and Mr. G. B. Tindale, B.Agr.Sc., Department of Agriculture. Mr. Thiele said that in addition to pre-cooling Pears, there was good authority for advocating the pre-cooling of Apples. Mr. Ward said that frequently during export, tests had revealed that the fruit itself, also cases, paper, etc., were at a temperature of 80 to 85 deg. Fahr.

Mr. Griffeth stated that all South African fruit was pre-cooled before shipment. It was decided that a Committee be formed to deal with the foregoing, and necessary improvements in ships' holds; the Committee to consist of the following:—Messrs. Griffeth, Brown, Thiele, Mills, Harrison and Parnham.

Sales Tax.—Mr. Carne stated that whereas manure was exempt from Sales Tax, spraying material was chargeable, and 6 per cent. was a big item. It was decided on the motion of Messrs. Carne and Brown to write to the Minister for Customs requesting that all material used in the combating or orchard pests and diseases be exempted from the Sales Tax.

TASMANIA

Leading Australian Firm of Fresh Fruit Exporters.
Manufacturers IXL Jam and Canned Fruits.
Hop Factors—Largest Cool Stores for Hop Storage in Commonwealth.
All Orchard Supplies available at all times.

Agents for—
Associated Evaporated Apple Manufacturers, Eagle, Star & British Dominions Insurance Co. Ltd., Federal Steam Navigation Co. Ltd., Scottish Shire Line of Steamers, Osake Shosen Kaisha.
Correspondence Invited.

H. JONES & CO. LTD.
HOBART.

-LEMONS-

We are the largest Buyers in Australasia

C. M. BROOKE & SONS
73 Whiteman St., South Melbourne, Vic.

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MELBOURNE.

"Fruit World Annual"

Comprehensive review of Australian and New Zealand fruit industry.

"The Fruit World," Box 1944
G.P.O., Melbourne.

TREE AND STUMP PULLING.

Well designed and faithfully constructed implements are of great value to the man on the land.

"Trewhella" Jacks, Stump and Tree Pullers, Grubbing Tools, Have World-wide Fame.

POISE AND BALANCE—so much admired in human character—are equally desirable and necessary in the realm of mechanics.

The quiet, able business man whose business or profession runs like "well-oiled machinery" has his counterpart in well-designed and faithfully constructed machinery such as is exemplified in the Trewhella type of implements.

Like other notable inventions, the Trewhella implements were born of necessity. The early pioneer members of the family, who were engaged in the sawmilling business, were faced with the necessity of having efficient machinery for handling logs for grubbing stumps. The implements which were made performed the work so well that the importance of the design was at once recognised, with the result that the brothers Trewhella commenced the manufacture of these implements—which have since secured world-wide recognition.

"Getting the Pull" on a big stump with the Trewhella "Monkey" Horse Grubber.

Wide Range of Usefulness.

Trewhella implements now cover a wide range of usefulness for the man on the land. The design and workmanship enable the implements to develop astonishing power.

Trewhella implements are made in varying sizes—to suit all needs. Fruitgrowers, farmers, land workers and contractors have a complete range from which to choose.

Jacks for Every Operation.

There are jacks for various lifting operations, also implements for tree pulling and for grubbing out roots. Grubbing equipment is also available. For heavy lifts the "Monkey" jacks are splendid. The eight-ton lift is exceptionally serviceable for grubbing out roots and stumps; the ten-ton lift has proved so universally valuable that it has come to be known as the King of Grubbing Jacks. This implement embodies all the good features of the other monkey jacks, and it has in addition a number of improvements.

Can be Used in All Weathers.

During clearing operations the weather is frequently wet. But if you have a "Monkey" jack there is no need for delay of any kind. The ground may indeed be too wet for using an ordinary jack or similar implement, but the "Monkey" grubber—possessing the "knack" for doing things—goes right ahead. No worry or fluster, and the work is performed with remarkable efficiency.

Again, this handy and well-designed implement can be used as a winch for very many purposes.

For smaller lifts than those just mentioned, the desirable implements are available. Where logs have to be rolled or lands cleared of timber, "Wallaby" jacks are suitable—these have lifting power of 2¼, 4 and 6 tons.

Trewhella Implements Appreciated.

Users of Trewhella implements have expressed their appreciation in the following terms:—"I can do as much in one hour with a 'Monkey' grubber as two men in a day without it." "I would never tackle a clearing job without a Monkey grubber." "Pulled more trees in a month with the Monkey grubber than I could have in 12 months without it." A citrus grower at Mongrove Mountain, N.S.W., writes:—"I can recommend all farmers and orchardists to purchase a Monkey grubber. We pulled 66 trees in one day, ranging from 8 ft. to 2 ft. 6 in. Those knowing Gosford timber, comprising Peppermint, Bloodwood, Red Gum, Ash and Stringy Bark, will appreciate what this really means. The machine has paid for itself many times over in six months."

Write for Illustrated Booklet.

The firm has prepared a well-illustrated booklet describing in detail the many implements which they manufacture. This booklet is available free on request.

Visitors to the Melbourne Royal Show are welcome to attend the demonstrations which will be given at the firm's stand, 91 Smith-street, Showgrounds.

"Out."—The Stump shown above successfully grubbed with the Trewhella Horse Grubber.

Orchard Cool Stores.

Success Has Attended the Erection of Stores on Individual Orchards.

A Review of the Operations of R. Werner & Co. Pty. Ltd.

ONE OF THE OUTSTANDING FACTORS in the development of the fruit industry in Australia has been the establishing of cool stores in fruitgrowing districts.

It is estimated that in Victoria alone there is space in country and city stores for holding over one and a quarter million bushels. In the other States and in New Zealand there has been substantial developments in the provision of cool storage facilities.

Apart, however, from the large district co-operative cool stores, special mention should be made regarding private cool stores on the orchardists' own properties.

When cool storage of fruit in the orchard districts of Victoria was first introduced about 1905, it was considered to be of such an experimental nature that very few growers felt inclined to venture on their own the financing of a private cool store.

The First Cool Store.

With the exception of Toomuc Valley Orchard, at that time no provision for cool storage in the orchard had been made in Victoria, and on account of the expense involved, the knowledge required to run the machinery and the doubtful results to be obtained, the risk was considered too great for any individual to finance the undertaking, consequently the first Government cool store at Doncaster came into being and the State Government provided the funds to defray the cost of buildings and machinery. At the same time the first private store was built not far away from the first Government store with the modest capacity of about 1,000 cases.

After about three or four years of experience, this grower, the late Mr. E. Lawford, formed the West Doncaster Cool Store Co., himself acting as the Secretary to the company. His main object was, instead of increasing his small store and doing the work of running the plant himself, to be relieved of this work and reserving a 3,000 case space for himself in the bigger store.

The Privately Owned Store.

After a few years in the co-op. store, however, he found conditions far from satisfactory to his own liking. Having the experience he had previously in his private store, and the fact that he could run his own store exactly the way he wanted to according to his own ideas, without being handicapped in any way by the opinion of the other growers, he decided to build a store of his own again, this time of a capacity of 15,000 cases.

Following his example, a number of growers built private stores of their own after they had been shareholders in co-operative stores. The capital required for the purpose they obtained by selling their shares in co-operative stores readily as there were always growers ready to take them up at a premium as the building of co-operative stores did not keep pace with the demand of the fruit industry.

Advantages of Cool Stores.

Another reason was that as growers realised the advantage of cool storage they could not increase their holding in the co-operative stores, consequently they had to find storage in general cool stores and pay the prevailing storage rate at the time. With the trouble and expense of extra handling, carting and inspecting it dawned upon them in the course of time, that taking everything into consideration it would pay them better to own a store of their own.

Private Store Good Investment.

Even when a grower with a private store has not sufficient fruit in his own orchard to fill the store, there are always neighbors who are prepared to take advantage of a chance to get space in a private store, and the revenue derived from such storage will help materially towards the cost of running, and in some localities it may be the means of increasing the revenue to such an extent that it may be a good proposition to have a store sufficiently large to take in a few thousand cases. Almost all private stores have the direct expansion system, which, if properly installed, is practically fool-proof in its operation and the loss of fruit under this system almost nil.

Any fruitgrower desirous of storing anything up to about five or ten thousand cases per year, will do well to examine the proposition of owning a small cool store in which he can set his own conditions and temperatures. seasons vary, demanding that fruit from this or that particular orchard needs a little more attention than usual.

At the big store the temperature is the same for all, and besides it is in some cases miles away. There is no trouble or skill needed to run a small store, and the costs operating are surprisingly low.

In these times when truck mileage and labor has to be husbanded, the investment of a small cool store right on the orchard is a proposition well worth entertaining.

At the recent annual conference of the Fruitgrowers' Cool Stores Association, a very interesting address was given by Mr. R. Werner; after reviewing the systems in operation, Mr. Werner's summary was that the direct expansion system under many conditions was to be preferred to the cold air circulation system.

* * * * *

All plants installed by R. Werner & Co. Pty. Ltd., carry a twelve months' guarantee. The advice of the company's experts is always available when required.

* * * * *

Running Costs.

The actual costs of running, say a 5,000 case cool store, are limited to power, oil and general upkeep. The operation of the plant is usually left to the owner or one of the family, and is quite a simple matter, requiring practically no skill as far as operation is concerned. It is unnecessary for even one man's entire time to be spent on a 5,000 case store.

* * * * *

Finance.

Where necessary, Messrs. R. Werner & Co. Pty. Ltd. are willing to arrange credit terms on the basis of a deposit, and the balance over two or three years.

* * * * *

Summed up, the value of having a cool store on one's own orchard is very great, there being less handling and cartage, and the fruit is under the direct control of the grower all the time.

A display of Messrs. Werner's cold storage equipment is on view at the Royal Agricultural Show, Melbourne.

The firm also invites growers to visit their headquarters and works at 54-86 Burnley-street, Richmond.

Russian fruit exports in 1930 amounted to 7,150 tons, as compared with 16,110 tons in 1929. The Apple is the principal fruit exported, and the main market is Germany.

Doctor: Yes, Mr. Snooper, you must eat more fruit. Eat the skin of the fruit too; it contains vitamins.
Snooper: Yes, Doctor, but——
Doctor: But what?
Snooper: Well, my favorite fruit is a Coconut.

CARRIAGE OF FRUIT BY SEA

FRUIT SHIPMENTS FOR SYDNEY AND QUEENSLAND PORTS SPECIALLY CATERED FOR.

Regular weekly service of **Fast, Modern, Passenger Steamers,** fitted with ventilated 'tween decks and Refrigerator Chambers.

By special arrangement Fruit, etc., for **Sydney,** leaving Melbourne **Noon Saturdays,** is delivered on Sydney Wharf **6 a.m. Mondays,** ready for early morning market.

Fruit for **Brisbane,** leaving Melbourne **Noon Saturdays,** delivered Brisbane Wharf 8 a.m. **Thursdays.** SPECIAL REDUCED RATES OF FREIGHT.

For further particulars and sailing dates, apply to:—

AUSTRALIAN STEAMSHIPS PTY. LTD.,
Howard Smith Ltd., Managing Agents, 35 Market Street, Melbourne, C.1. Tel. Cent. 8314.

AUSTRALASIAN UNITED STEAM NAVIGATION CO. LTD.,
MacDonald, Hamilton and Co., Managing Agents, 467 Collins Street, Melbourne, C.1. Tel. Cent. 9708.

ADELAIDE STEAMSHIP CO. LTD.,
505 Collins Street, Melbourne, C.1. Tel. Cent. 475.

HUDDART PARKER LTD.,
466 Collins Street, Melbourne, C.1. Tel. Cent. 8960.

McILWRAITH McEACHARN LTD.,
94 William Street, Melbourne, C.1. Tel. Cent. 9440.

MELBOURNE STEAMSHIP CO. LTD.,
31 King Street, Melbourne, C.1. Tel. Cent. 8693.

TRAVEL INTERSTATE BY SEA

SUPPORT CO-OPERATION

By Consigning your FRUIT to the

Producers' Distributing Society Ltd.

(Late Coastal Farmers' Co-operative Society Ltd.)

Agents for

"BLACK LEAF 40"
and all Orchard Requirements

Melbourne Sydney
Newcastle Hobart
Launceston Devonport

Cooksley & Co.
(W. P. COOKSLEY)
Reliable Fruit Agents
Over 30 Years Experience
TRY THEM!
Telegraphic Address: 'COOKSLEYS,' BRISBANE
Fruit Exchange, Brisbane
QUEENSLAND
Shipping No. 29
Reference: Commercial Banking Co. of Sydney Ltd.

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All consignments for this market will have careful attention and realize highest prices if sent to

The Co-operative Fruitgrowers of Otago Limited, Dunedin

Personal supervision of every consignment.

Cheques posted promptly.

Drop us a Line or Cable "Peachbloom," Dunedin.

SOLID CARBON DIOXIDE.

Transport of Roses.

The following extract from the "Compressed Gas Manufacturers' Association News Bulletin," dates March 31, 1931, about the enrichment of the air in storage by certain concentrations of carbon dioxide from solid CO2, is of interest.

Small packets of solid carbon dioxide would appear to be beneficial in the despatch of Rosebuds, for instance, as the gas subliming from the solid state apparently retards the opening of the buds, and therefore permits the flowers to be sent considerable distances.

"Carbon dioxide Storage of Fruits, Vegetables and Flowers.—The use of solid carbon dioxide in refrigeration has led to an interest in the effect of CO2 on perishable foods. Bananas, Apples and citrus fruits were but little affected by concentrations up to 33 per cent., and some even higher. Vegetables showed considerably more variation, an excess of moisture being objectionable. This treatment prolonged the life of flowers by retarding the opening of the buds, indicating a gain of about four days. Similar retardation to ripening was shown by some fruits."

* * *

Solid carbon dioxide is obtainable from Carba Dry Ice (Australia) Ltd., 679 Victoria-street, Abbotsford, Vic.

First Urchin: "My father's 'ad 'is photograph taken."
Second Urchin: "That's nothing. My father's 'ad 'is fingerprints took."

Consign your Fruit to—

J. JAEGER

Telegrams: Jaegagento, London.

FRUIT IMPORTER

18 Bedford Chambers, Covent Garden
London, W.C.2.,

and compare the results with those of the competition.

Try and See.

AGENTS REQUIRED.

Rockhampton

The starting point for the Great Queensland Central Railway has a population of 30,000, and offers a good market for your fruit.

ORCHARD FRUIT SUPPLIES

offer a prompt and reliable selling service. Best Prices. Prompt advices and returns.

Reference:—Australian Bank of Commerce.
'Phone: 1584.
P.O. Box, 223. Brand: ORCHARD RTON.

F. CHILTON

ESTABLISHED 1894

FRUIT COMMISSION AGENT

Licensed under Farm Produce Agents Act

Highest Market Prices — Prompt Returns — Reliable Advice

Registered Address for Telegrams and Cables, "CHILTONS"

References :— Bank of N.S.W., Haymarket, Sydney and Growers throughout Australia

CITY FRUIT MARKETS, SYDNEY

GRUBBING

Thousands in Use

It earns its Famous LOW PRICE in a Few Days

Write for Catalogue

WITH A "DIGGER" WINCH

A Man can uproot more Trees and Stumps in a Day than he would dig out in Ten Days

QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria

READ THE

"Australasian Poultry World"

Something of Interest for every Poultry Breeder.

All Newsagents **6d.** *per Copy*

NEW NICOTINE SPRAYS.

Particulars are to hand regarding "Penetrol" and "Nicotrol," which are stated to be improvements on the standard nicotine sprays, and cheaper. The information is included in booklets from the Kay Fries Chemicals Inc. (Kay Laboratories Division), 180 Madison-avenue, New York, N.Y., U.S.A.

"Penetrol" is described as an activator for nicotine spraying solutions. A brochure on this subject is to hand, written by Professor John L. Hoerner, of the Colorado State Experiment Station, reporting favorably on several years' work with "Penetrol" as a nicotine activitor. "'Penetrol' is a free-flowing, easily miscible activator for nicotine. It does away with the agitation of soap in hot water, and the difficulties of solution in hard waters."

"Nicotrol" is described as "a complete nicotine spray carrying its own spreader and giving a better control of aphis at a lower cost of spray."

Every man has three characters—that which he exhibits, that which he has, and that which he thinks he has.

There's a wide difference between investments that sound good, and sound investments.

* * * * *

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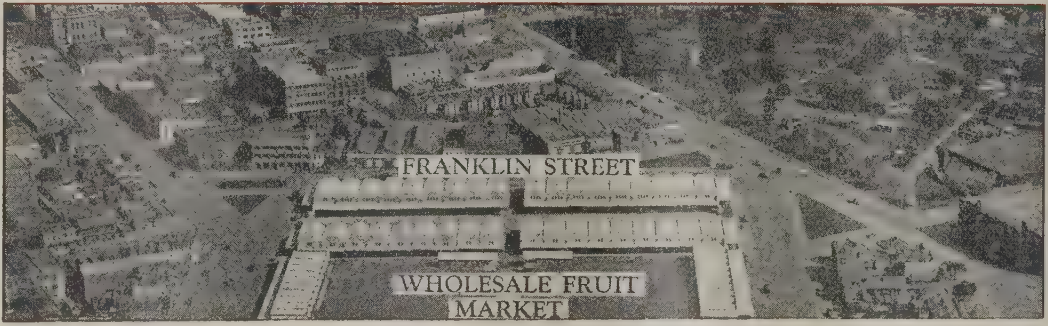

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EDITORIAL.

The Pomological Committee.

SOME FEW YEARS AGO the Australian Pomological Committee performed a very useful service. First in deciding on uniform nomenclature of varieties, and secondly by authoritatively examining new varieties of locally-raised fruits. It is a pity that similar varieties of fruits should still be exported under differing names. Had this Committee continued its regular annual sessions, it is probable that uniformity would by this time have been achieved. Confusion is caused in our export markets by the lack of uniformity. It is earnestly hoped that the Pomological Committee will be reconstituted, and that its useful work will be continued, not only in deciding on uniform names, but in giving encouragement for new varieties to be brought forward.

The Canadian Treaty.

SUFFICIENT TIME has elapsed since the signing of the Australian-Canadian Trade Treaty to permit a fair estimate to be made of its general effects.

Under this treaty the mutual trade between Canada and Australia should develop. Australia will continue to receive paper, canned fish, timber, etc., on favorable terms.

The export trade from Australia to Canada should now increase, particularly with dried, canned and fresh fruit.

Oranges from Australia are admitted free: foreign fruit pays 35 cents per cubic foot, or about 2/8 per case. Australia is now sending substantial quantities of Oranges to Canada. Previously U.S.A. supplied practically the whole of Canada's requirements, which amounted to 2,406,500 boxes, valued at £2,000,000 during the year ended March, 1931.

So far the Oranges have gone principally to Vancouver, but it is to be earnestly hoped that all the difficulties which are now in the way of big shipments to Montreal will be overcome.

The trade in exporting Australian dried and canned fruits to Canada has substantially increased.

The negotiating of this trade treaty should be mutually beneficial. Certainly as regards our purchases from Canada, Australians should need no urging to ask for and to use these goods, thus stimulating trade with Canada and making the trade treaty effective.

CALIFORNIA CITRUS EXCHANGE.

Death of Mr. E. G. Dezell.

Fruitgrowers generally, and citrus growers in particular, will regret to hear of the sudden death of Mr. Earl G. Dezell, general manager of the California Fruitgrowers' Exchange, Los Angeles. Mr. Dezell died early in August as a result of a heart attack. He had been identified with the development of the California Fruitgrowers' Exchange for over thirty years. A courteous and able man, Mr. Dezell fulfilled his onerous duties to the satisfaction of all. He was known all over the world as an authority on citrus fruits and an organiser of outstanding ability. The "Fruit World" joins with others in expressing sympathy with the California Fruitgrowers' Exchange, and Mr. Dezell's family in the loss of this energetic and able man. The deceased was only fifty years of age. He was a prominent member of the Masonic order.

CALIFORNIAN PEACHES.

Crop Reduction Plan: Trees Being Uprooted.

THE CALIFORNIA PEACH GROWERS' Association reports that after an intensive effort, a crop curtailment plan which has been subscribed to by all canners in Northern California, including both commercial and co-operative, has been agreed upon for the handling of the 1931 crop of canning Peaches.

Under the plan the pack of Cling Peaches for 1931 is fixed at 9,000,000 cases, this being a reduction of 4,000,000 cases as compared to the pack of 1930. In view of the unfavorable market and economic conditions obtaining throughout the world, it was the judgment of the industry generally that this drastic reduction in pack was necessary to stabilise the market for canned Peaches and restore the industry to a sound basis.

The 1931 curtailment programme differs in several essentials from the plan in operation last year. The control plan of 1930 definitely established the amounts the growers would receive on tonnage delivered, as well as the tonnage sold to the committee to be dropped. The cost of control was paid by the canner in addition thereto. This year's plan operates the other way around. The price the canners will pay on open or seasonal contracts, is fixed at 20 dollars per ton, and the costs of control are deducted therefrom. The price per ton the grower will receive will be dependent altogether upon the size of the surplus. If there is a large surplus he will receive less and contrariwise, if small, the price will be higher. A differential of 6.00 dollars per ton has been agreed upon between crops that will be dropped and those that will be delivered to canners. Based on the Survey Committee's estimates, it is safe to say that growers whose crops are sold to the committee will receive a minimum of 5.00 dollars per ton, and those who deliver to the canners will receive a minimum of 11.00 dollars per ton. However, it is quite reasonable for growers to expect higher prices than those above indicated, especially in view of the fact that the recent hot spell has done serious damage to crops in all districts which may materially reduce the surplus tonnage.

Another feature of this year's curtailment programme is that it provides for the removal of trees. A fund is set aside which will enable the Crop Control Committee to pay a bonus of 2.50 dollars per ton on the No. 1 Peaches estimated to be produced on the acreage removed. On this basis the fund will be sufficient to pay for the removal of enough acreage calculated to produce 80,000 tons of Peaches. This is deemed to be a very constructive policy as it strikes directly at the source of the problem, namely, over-production. With the removal of this surplus acreage, it will go a long way towards remedying the situation.

CHILIAN NITRATE OFFICES CLOSED.

The operations of the Chilean Nitrate Association in Australia have been suspended, and the offices occupied in the Bank of N.S.W. Building, Wynyard-street, Sydney, were closed during September.

The Australian representative of the Association informs us that this action has been taken on receipt of instructions from the head office, which had pointed out that at present there were not sufficient encouraging features to justify a continuance of operations in Australia.

Stationary Spray Plants.

Success in New Zealand.

Interesting and Helpful Details.

(By J. A. Campbell, Director of Horticulture Division, N.Z. Department of Agriculture.)

STATIONARY SPRAY PLANTS are becoming increasingly popular. They are very largely in use in Wenatchee and Yakima, in the State of Washington (U.S.A. Pacific Coast). New Zealand has also adopted the system, and it is also extending in Tasmania. Enquiries are now being made in Victoria, New South Wales, and the other States regarding the efficacy of the system.

In answer to an enquiry from the "Fruit World," the following interesting information was courteously supplied by Mr. J. A. Campbell, Director of the Horticulture Division, N.Z. Department of Agriculture. Mr. Campbell writes:—

The use and development of orchard stationary power spraying plants and piping systems in New Zealand has increased very rapidly during recent years, many advantages being gained thereby.

Irrespective of whether the orchard land is undulating, heavy or level, the spray material can be applied when the ground is in such a condition owing to wet weather as to render it impossible for spraying to be carried on by a portable plant, for instead of the ground having to withstand the weight of a heavy vehicle with the engine, pump and tank containing the spray material, it has only to carry the weight of the men carrying the spray hose.

It is often due to the impossibility of taking a heavy, portable plant on the orchard land that the trees and fruit do not receive the spray at the correct time, and in some instances a particular spray is missed altogether, the grower suffering loss in consequence owing to his fruit being dirty or diseased.

The initial cost of a stationary spraying outfit and the piping of an orchard is somewhat higher than a portable plant, but while there may not be a very wide difference between the two systems insofar as the cost of power for pumping the spray, considerable time and labor are saved in its application, This, of course, varies with the capacity of the pump, the pressure maintained, and the number of spray guns used.

However, one man with a stationary spraying plant can do as much as two with a portable outfit.

Stationary spraying plants are more reliable and less depreciation occurs. The pumping machinery and tanks should be located in a convenient position to the farm buildings and water supply. The successful operation of the orchard piping system depends largely on an ample supply of fresh water, as the pipes must be flushed out daily and remain charged with water between times.

* * * * *

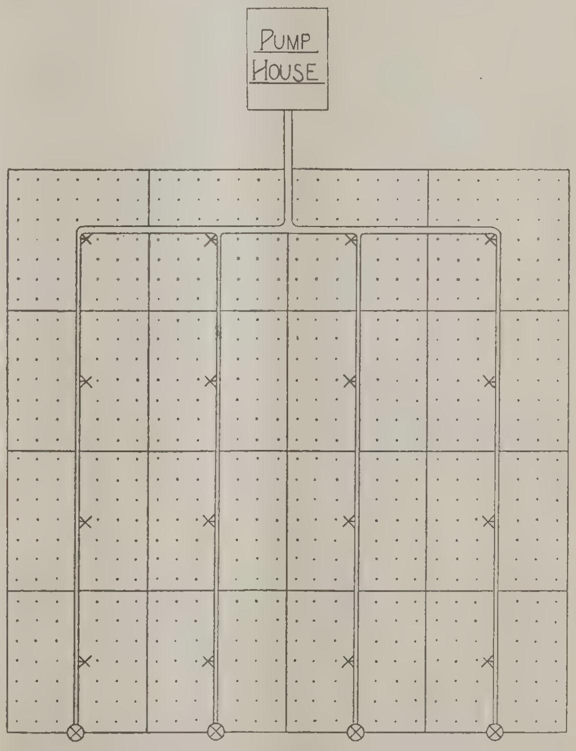
IN INSTALLING a stationary power plant the probable extension of the orchard or future plantings should receive consideration. If this is done the only additions to the system will be the laying down of the additional pipes and connecting them to those previously in use.

Stationary power plants are of a varied character, and many makes of pumps are used. The three principal pumps in general use are the Friend, Bean and Myers, and are driven by electric motors, petrol or oil engines, some of which are belt and others chain driven, provision also being made for driving the agitators in the spray mixing tank or tanks, as the case may be.

The plant necessary

for a complete stationary spraying outfit suitable for an orchard of from 10 to 20 acres consists of a 5 h.p. electric motor with a Duplex pump, spray mixing tank fitted with suitable agitators, and tanks for water supply and connections. The pump should be capable of maintaining a pressure of 300 to 350 lb. to the square inch, and fitted with a release valve, which can be set to any pressure of spray material, the excess being by-passed back to the mixing vats, when the spray guns are closed in the orchard.

The size of the plant varies with the size of the orchard, and many large installations are operating in the Dominion varying in size up to 15 h.p., using 2, 4 or 6 spray guns.



Plan Showing a General Scheme of Piping a 7-Acre Orchard.

Mains from pump indicated by wide-spaced lines, ¾ in.

Laterals indicated by closer lines, ½ in. piping.

X's indicate hydrants. High-pressure taps.

The space enclosed by outer lines indicates area covered and number of trees sprayed from each hydrant.

X enclosed in circle at end of laterals indicate drain cocks.

Spray mixing vats vary in size from 200 to 400 gallons. These are made of wood or reinforced concrete, and are generally rounded at the bottom and fitted with washout plugs in order to remove any deposits which may accumulate in the vats. On the suction pipe or hose a special strainer is fitted to prevent any solid material passing into the pump and through it into the pipe system.

The larger installations have two large vats. This prevents any stoppage in the spraying operations, as each tank is a separate unit, and while No. 1 is being drawn upon No. 2 can be prepared in order to be turned on immediately No. 1 is empty, thus saving considerable time by having available large quantities of spray to be drawn on at will.

Compare this advantage with the portable spraying plant, where the quantity of spray mixed at one time varies from 60 to 80 gallons, and the necessity of the many visits from the orchard to the source of supply, measuring up the spray material, and going through the mixing programme again and again. In a large orchard if several portable plants are in operation the loss of time and labor is increased accordingly.

Although in a number of piping systems the location of the spray hydrants and the number of trees sprayed from one point vary, the general principle of laying down the pipes is the same. No hard and fast rule can be made with regard to the number of feet of each individual size of piping that is required for the mains and laterals; this is determined by the size of the plant, the acreage, and the formation of the orchard.

In general practice, ¾ in. mains and ½ in. laterals have proved to be satisfactory. However, in larger orchards with powerful installations a small section of 1 in. main may be laid down leading from the pump, and the ¾ in. branches taken off the 1 in. to the various plots.

Herewith is a sketch showing the general scheme of piping a 7 to 10 acre orchard. On the main leading from the pump a stop valve is fitted to isolate the piping system from the pump, enabling it to be worked without circulating the spray through the pipes, the fluid passing back into the vats through the release valve and bypass.

The main is of ¾ in. piping; from this main the laterals, which are of ½ in. piping, branch off the main at every seventh tree. Both the main and laterals are placed 12 in. under the surface of the ground. The laterals are run down the row near to the tree, and where the hydrants occur a T.P. is fitted, to which a short piece of pipe and a bend is fitted and the hydrant brought up and bound to the tree by a piece of wire run through rubber hose, which holds it firmly in position. Each individual lateral can be isolated one from the other by a stop valve.

It will be seen that the first lateral branches at the fourth row of trees and then at every seventh row; similarly it will be seen that the first hydrant occurs at the fourth tree and then every seventh, the last hydrant being at the fourth tree from the end of the row. This enables the operator to spray 49 trees from each hydrant. The length of hose required varies from 80 to 120 ft., according to the spacing of the trees.

In order to prevent loss of spray fluid when removing the hose from one hydrant to another, a special fitting is connected to the hose adjacent to the high pressure tap on the hydrant, which, when shut off, maintains the spray in the hose.

Method of Operating.

Supposing the whole system to be full of water when spraying is commenced, open tap No. 1 to start pumping spray through the main. This will drive the water ahead of it through tap No. 1, and when the spray arrives commence spraying the 49 trees in the plot. When they are finished open up tap No. 2 and close No. 1. The spray will force the small drop of water out of the pipe between 1 and 2, and the spraying can commence on the second set of 49 trees. Continue this until the spraying of the trees commanded by the last tap on this lateral is nearly completed, then give the pump clean water. This will in turn force the spray ahead of it, and by the time the water reaches the last tap the whole of the trees of the section should be sprayed and the pipes again full of clean water.

If this practice is followed with respect to all cross-laterals, little spray will be wasted. However, much will demend on how close the quantity of spray in the pipes is calculated after the pump is given water only. Some growers prefer not to bother, but go on and fill the whole system with spray, forcing this out with water after spraying has been completed, on the ground that the value of the spray wasted is no greater than the time lost in saving it.

Approximate cost of piping an orchard, including pipe, fittings, and laying down the pipes for a 10 to 20 acre orchard:—

10 acres at the rate of £8 per acre	£80	0	0
Pump and motor (capacity 10, 15 gals. per min.)	130	0	0
Two 300 gallon tanks	16	0	0
Water tank and fittings	8	0	0
Foundations and stands	6	0	0
Installation of power plant	10	0	0
Two hose 100 ft. at 1/4 per foot	13	6	8
Special hose connections (2)	3	10	0
Agitator, shafting and stuffing boxes	3	0	0
Transmission of electric power	30	0	0
Transport of piping and plant	5	0	0
Total	£304	16	8

BUNCHY TOP OF BANANAS.

Regulations for Control.

Discussing in the current "Agricultural Gazette" of N.S.W. some aspects of Banana-growing, the departmental fruit instructor located at Murwillumbah emphasises the need for attention to the problem of bunchy top control. The successful and economical control of bunchy top, it is pointed out, depends on detection of the disease in its earliest stages, and treatment of the affected plants and their suckers with an insecticide prior to their removal and destruction. No grower should lack the necessary information on any of these points, for if he cannot immediately get into touch with his local inspector the information is available in leaflet form from the Department of Agriculture, Box 36a, G.P.O., Sydney.

Growers should make themselves thoroughly conversant with the new regulations, which make it compulsory first to destroy the aphids on the plant by spraying with an insecticide and then to dig out the plant and cut it up as prescribed. The pouring of kerosene down the centre of the stem is no longer recognised as an effective method of destroying the plant. Anyone carrying out the regulations with thoroughness will have little difficulty in controlling bunchy top.

Be active, be energetic, be enthusiastic and faithful, and you will accomplish your object. Nothing great was ever achieved without enthusiasm.

International Fruit Situation.

Big American and European Crops.

AN INTERESTING REVIEW of the fruit situation, particularly as regards Apples, has been received by J. B. Mills & Co., fruit exporters, Melbourne, from a competent authority in London, the following being a summary of the particulars courteously made available. The letter is dated August 27, 1931.

American Crop.—U.S.A. is shaping to have the biggest crop since the exceptionally large production of 1926. The barrel Apple States (Atlantic coast), show an increase over last year of 42 per cent., the boxed Apple States (Pacific coast) show a decrease from last year of 9.5 per cent., and the United States as a whole shows an increase over last season of 14 per cent. Pacific Coast Newtown and Jonathan crops appear to be on the light side, particularly Oregon Newtowns, but Winesaps and Delicious are heavy.

The British Columbian crop is estimated at about 3½ million boxes, a decrease from last year of 22 per cent., but both size and quality are very good.

In Nova Scotia there is a heavy crop, probably nearly 30 per cent. more than last season, but in some sections spot is very bad.

Continental Fruit Supplies.

From a reliable Continental source, the following particulars have been made available:—Apple crops in England and Wales, generally light; Northern Ireland, fair; France and Belgium, fair to good; Germany, generally good; Italy, fairly good; Netherlands, fair; Hungary, average; Switzerland, good to very good; Czechoslovakia, fairly good, Elbe Valley, 70 per cent. normal, other regions fairly good; Yugoslavia, good; Bulgaria, good; Scandinavia, fair; Russia, very good, abundant crop anticipated.

General Situation.

As a result of the economic situation, together with the financial crisis, it appears to be certain that heavy additional taxation will be imposed in Great Britain, affecting all classes of the community, and this factor will undoubtedly operate when next season's opening prices are being arrived at. No such prices are anticipated as were obtained last season for, say, West and South Australian Cleos. and Jonathan, as the public will be operating on minimum prices. While Germany may prove a reduced source of outlet for Australian fruit, it is hoped that new markets will be opened up, particularly France.

AMERICAN APPLE CROPS.

Generally Above Average, but Washington and Oregon Lighter.

THE COMMERCIAL APPLE CROP in the United States is reported to be above the average for the 1931 season. A recent forecast shows that the increase is approximately 13 per cent. over the 1930 yield. The July estimate of the Department of Agriculture showing a crop of 115,089,000 bushels, compared with 101,169,000 for 1930. This estimate is for the commercial crop alone and does not take into consideration the total or farm crop. The commercial crop in 1929 was reported at 86,921,997 bushels, the five-year average crop, 1925-1929, was 97,713,000 bushels.

Reduced Crops on Pacific Coast.

Much of the export to Great Britain is in barrels; the trade, however, which is of particular interest to Australia, is that in boxed fruit from the Pacific Coast—in particular the States of Washington and Oregon. In both of these States the forecast is for a reduced crop in 1931. In 1930 the commercial production of Apples in the State of Washington was 34,065,000 bushels, the 1931 forecast is 25,560,000 bushels. Oregon, 1930, 4,800,000; 1931 forecast, 3,627,000.

The varieties grown in Washington and Oregon are mainly Winesaps and Newtowns. These compete with Australian fruit in Great Britain and the Continent.

APPLES FOR ARGENTINE.

40,000 Cases Desired From South Australia.

THE Trade Commissioner for South Australia (Mr. C. F. G. McCann), who is now in the Argentine on private business, has cabled the Government Produce Department through the Agent General that he has been able to interest a large Buenos Ayres fruit importer in the possibility of opening up a trade in Apples between the Argentine and South Australia. This firm is prepared to negotiate for business on the basis of purchasing 20,000 cases on f.o.b. or c.i.f. terms, provided a further 20,000 cases are shipped on consignment for sale by them on arrival.

The varieties asked for are—Jonathan, Rome Beauty, Delicious, and Winesaps, and as these are the most difficult to sell in Europe, owing to the preference for yellow Apples, the prospects of this business should appeal to South Australian growers.

Other conditions are that the standard softwood case is to be used, and that the Apples shall be packed to counts. Shipments to be made in April and early May.

With a view to continuing negotiations for this business, growers interested are invited to communicate with the General Manager, Government Produce Department, Box 909F, G.P.O., Adelaide.

AUSTRALIAN DRIED FRUIT.

Oversea Sales.

SUBSTANTIAL SALES of Australian dried fruit during the week ending September 24, were reported to the London Agency of the Commonwealth Dried Fruits Board.

During the week 2,038 tons were taken by buyers in the several centres, the total value being £107,800. The position of Lexias improved consequent on movement of foreign exchanges, 190 tons were placed at an average of £39/10/- per ton. Currants are now practically cleared up, 462 tons were taken at an average of £43/13/4 per ton, while 1,317 tons new season's Sultanas were sold at an average of £58/16/8 per ton.

Sales in Great Britain to date now total 19,421 tons, and unsold balances in British ports and afloat are reduced to 4,488 tons. It is now almost certain that any balances of Sultanas and Currants will be taken up during the next three weeks.

Tasmania.

MANY IMPORTANT MATTERS were dealt with at the meeting of the Tasmanian State Fruit Advisory Board held on September 22. There were present:—Messrs. B. J. Pearsall (Chairman), A. H. Weedon, F. Harrison, J. H. Astell, M. Calvert, B. H. Saunders, O. J. Morrisby, the retiring Secretary, Mr. P. H. Thomas, and the newly appointed Secretary, Mr. A. J. Honey.

Advertising Fruit in U.K.—A letter was read from the Secretary of the Australian Apple and Pear Export Council, stating that the Executive had decided to approach the Markets Department, requesting that a levy not exceeding one halfpenny per case be collected, under regulation, on all Apples and Pears exported from Australia for the purpose of advertising fruit in Great Britain. This would include both the consignment and f.o.b. fruit, and the publicity would be handled through the present established channels subject to direction from this end. Advertising Committees to be formed in each State. After discussion it was decided, on the motion of Messrs. Astell and Calvert, to adopt the recommendation, subject to review within twelve months.

Nomenclature of Fruit.—The Board, by resolution, adopted uniform names as decided at the recent Apple and Pear Export Conference. (See page 506, September "Fruit World.")

Committee of Overseas Agents.—The Australian Apple and Pear Export Council wrote, stating it was desired to appoint a Committee of Agents in Great Britain, as receivers for Australian fruit, requesting a list of recommended agents from Tasmania, and stating that on receipt of similar lists from the other States, a combined list would be re-submitted to Tasmania. Mr. Thomas said that a list of agents had been brought before the Board by Mr. J. P. Piggott on his return from England. It was decided that this list be circulated among growers through the Agricultural Bureaux for an expression of opinion.

Trade Commissioner for England.—Several delegates spoke in favor of the appointment of a Trade Commissioner in the United Kingdom for Tasmania in preference to having an Agent General.

Statutory Powers.—The Chairman reported that the Minister for Agriculture (Sir Walter Lee) intended shortly to arrange a Conference of all interested to examine details with regard to the proposal for giving statutory power to the State Fruit Advisory Board.

Destruction of Blackbirds.—Mr. J. H. Astell moved that a reward of 5/- per head be offered for all blackbirds killed in Tasmania. Blackbirds were destroying large quantities of fruit. Mr. Thomas said in winter the blackbirds lived on grubs. With regard to the starling, too, examination in America over ten years had shown that the birds were of value to the fruit industry. After discussion as to the habits of the birds, the motion was withdrawn in favor of securing further information.

It was decided to approach the Federal Government, requesting that fruitgrowers and other primary producers be exempted from the sales tax on requisites used in production. A motion requesting a substantial reduction in customs duties and a reconstruction of the tariff was also carried.

With regard to the sugar embargo, it was decided to confer with the other States to take concerted action in opposition to the sugar embargo, and to test the legality of the five years agreement.

SUGAR EMBARGO.

Cost Tasmania £1,000 a Day.

TASMANIA STRONGLY DISAPPROVES of the Sugar Embargo. The subject was discussed with vigor at a meeting of the Tasmanian State Fruit Advisory Board on September 22. A letter was received from the Prime Minister's Department, stating that of the £315,000 contributed by the sugar industry to the fruit industry, the sum of £110,000 would not necessarily be used in advertising the sale of manufactured fruit products throughout the Commonwealth. On the motion of Messrs. Saunders and Morrisby, it was decided—

> "That this Board most urgently requests the Premier to communicate with the five other States with the object of taking concerted action in opposition to the Sugar Embargo, which is slowly but most surely strangling the small fruit industry in Tasmania, and, if necessary, test the legality of the five years agreement."

The Chairman (Mr. B. J. Pearsall) in supporting the resolution, stated that the Sugar Embargo severely restricted the consumption of berry fruits, and that the high price of sugar was detrimental to the consumption of fruit as jam or any other form. Tasmania was a fruit-growing country and until the price of sugar was lowered, Tasmania would continue to be seriously affected. The embargo was costing Tasmania over £1,000 per day, and was crippling some of their principal industries. It was a breach of faith with the people under Federation.

PERSONAL.

Mr. A. J. Honey has been appointed Secretary of the Tasmanian State Fruit Advisory Board in the place of Mr. P. H. Thomas, Chief Horticulturist, who recently resigned. Mr. Honey is Secretary of the Tasmanian Farmers', Stockowners' and Orchardists' Association, and organiser of several highly successful All-Australian Fruit Shows at Hobart. The Board is to be congratulated on securing the services of Mr. Honey for this important position.

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At the last meeting of the State Fruit Advisory Board, great appreciation was expressed for the services of Mr. P. H. Thomas, and it was decided to place on record a minute expressing the Board's appreciation of his services. Mr. Thomas was presented with an inscribed fountain pen.

FRUIT EATING CHAMPION.

Mr. J. P. Gibson Competing in Marathon Race.

A WONDERFUL DEMONSTRATION of rejuvenation is Mr. J. P. Gibson, of Caulfield, Vic., whose diet consists mainly of fruit, nuts and salads. In addition to the interesting items already published concerning Mr. Gibson, surely the latest will cause astonishment. Although just on 64 years of age, Mr. Gibson is competing in the Marathon race—a 25 mile run—on October 3. He knows he can do the distance as he arose at 6 a.m. a Sunday or two ago and ran 28 miles without stopping.

* * *

Fruitgrowers have a unique opportunity of securing the services of this vigorous champion in a campaign to increase fruit consumption.

Citrus News and Notes.

EXPORT OF ORANGES.

Murrabit Packing Co. Receives Favorable Reports from Canada and China.

"Best Ever Imported," Says Canadian Report.

THAT THE FUTURE of the citrus industry depends upon export is the firm opinion of the Murrabit Packing Co. Pty. Ltd., Murrabit, Victoria, of which Mr. Dudley J. Walters is the Managing Director: further that the trade can be developed only through packing houses. This company has been shipping a good deal of citrus away from Australia—practically all over the world, and so far has had good reports and payable prices.

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Favorable Report from Canada.

The Murarbit Packing Co. received a report from its agent in Vancouver in reference to a shipment of Navels which left Sydney on July 23 per R.M.S. "Aorangi," but would hold the market for Australian fruit.

The shipment consisted of 187 cases (1 1-3 bushels) of the Murrabit Packing Co.'s "Blue Ribbon" Navels. Extracts from the report are as follows:—

"The consignment from Murrabit arrived in perfect condition, as if freshly picked from the trees. I have had various demands to sell them from such people as the Hudson Bay Co., but have been asked to display and sell the whole consignment at the Vancouver Canadian Pacific Show, to which I have agreed.

"Best Ever Imported."

"It is considered that the fruit from Murrabit is the best that Canada has ever imported. Everyone who has seen it is astonished. Even the wharf laborers and fruit carters said the cases were on the average 10 lb. per case heavier than any they had handled so far. To test this I weighed ten cases of 'Blue Ribbon' brand and ten cases of the other brands; this test confirming the above-mentioned opinion. Weight, as you know, meaning sugar and juice; there was more juice in these Oranges than any others that have ever come to Vancouver.

"I obtained the services of a Miss Laverock, graduate M.A., Magill University; she is considered a culinary expert in this part of Canada, and has had a vast experience recommending for dieting all classes of the better fruit and foodstuffs. Her opinion is that of all Oranges she has tasted from California, Spain, Florida, etc., she has not so far tasted anything with the 'distinctiveness' and 'character' unique to the 'Blue Ribbon' brand of Australian Navels.

"There is no doubt that if the Murrabit Packing Co. keep their packing up to the same standard as this consignment, they will establish a market here and obtain prices somewhat ahead of any other Australian brands."

The season is in full swing at Murrabit: the packing company expects to handle more than last season: with the amount exported it is hoped that growers will receive a price equal to last year's.

The foregoing is very gratifying to the Murrabit organisation. Indeed, it is an excellent advertisement for Australia.

China Also Appreciative.

The Murrabit Packing Co. has also received a report from an Eastern market which they have been supplying for the past two seasons, stating they were not going to buy any further American Oranges.

CITRUS EXPORT.

The manager of the Victorian Central Citrus Association, Mr. J. A. Parkes, states that two shipments of Oranges were sent to Hong Kong and Shanghai this season—one shipment in June and the other in July. Of the June shipment to Shanghai, the realisations are not yet known: the prices in Hong Kong "were nothing to write home about." The shipment will cover expenses, but the margin of profit is very small. The July shipment to Shanghai arrived in good condition, but no other details are available. It is believed that these markets have their definite limitations.

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The Oranges per "Canadian Cruiser," arrived at Montreal, according to cables, with a one to five per cent. waste. However, a report from Toronto two weeks later recorded up to 50 per cent. waste.

It is this Montreal market which the Federal Citrus Council would like to develop, for it is capable of absorbing up to 2,000,000 cases in the season. It is quite evident that there are difficulties to be overcome. The Council is asking the several citrus producing States—Queensland, New South Wales, Victoria and South Australia, what quantity they would be prepared to guarantee for export next season. Australia enjoys a preferential tariff, but it is certain that the competition with California will be keen.

The fruit from Australia must be "Brogdexed" if it is to enjoy the "all risks" insurance: some Australian districts would be debarred from shipping as they lack the plant to give the fruit the necessary treatment.

Then again, the ships need to be fitted up for the carrying of citrus, especially the providing of cold air circulation. The journey is scheduled at 52 days, but it takes longer—up to 63 days.

Regular supplies of Oranges are being sent from New South Wales to Western Canada. On each monthly boat since June, between 6,000 and 7,000 boxes have been sent to Vancouver, and these shipments will continue probably until November; thus making a total of 40,000 to 50,000 boxes for the season.

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The export of citrus to New Zealand is being continued. About 10,000 to 12,000 cases go forward by boat every three weeks. Victoria and South Australia supply the South Island, leaving N.S.W. to supply the North Island. The shipment of Navels has now practically ceased, and Valencias will be sent early in October.

Prices for good fruit are satisfactory, but unfortunately owing to the wet season, much of the fruit is arriving wasty. Lemons, on which there is duty of 1d. per lb., the prices range, according to quality, from 10/- to 17/- per case.

CITRUS DIE-BACK.

For the control of exanthema, which causes die-back of citrus, the soil should be treated with bluestone, and the trees sprayed with Bordeaux mixture. Spray when trees are in full bloom in October, with Bordeaux 6-4-100 (adding half gallon of spraying oil as a spreader. The bluestone treatment of the ground is to apply 1 to 2 lbs. copper sulphate for trees six to eight years old. Apply in late winter or early spring. Older trees may be given 4 lbs. per tree, and a second application in November and December.

SHIPMENT TO CHINA.

Excellent prices for citrus were obtained by R. A. Wing & Co., Wholesale Fruit Market, Melbourne, for a shipment of eighty cases sent to China recently. The firm's Hong Kong agent reports having obtained 19 dollars per case (1½ bushels) for Washington Navels, and 17 dollars per case for Lemons. The Australian pound is equal to 14 dollars 15 cents Chinese money, which means £1/6/10 per case for Oranges and £1/4/- for Lemons. Freight and other charges reduce these prices by 7/- per case, which still leaves a fine margin of profit.

Oranges sent to Shanghai in dump cases, returned 12/3 per case free of all charges.

TRADE IN THE EAST.

To develop markets in the East, Chinese merchants are showing much activity. Wing, Young & Co., of Melbourne, who established agencies in China some time ago, have been sending shipments of fruit to China that have proved profitable. Lemons sold at Hong Kong at £1 per case, Navel Oranges sent in Californian cases brought 17/6, while those sent in dump cases sold at 12/6.

R. A. Wing, another Melbourne firm of fruit merchants, have also done well with Oranges sent to China. The prices received by them show a great disparity as between Kong Kong and Shanghai. In the latter port they received 16/6 per case for Navels in dump cases, while the same fruit only brought 12/6 at Hong Kong. This firm has also had several enquiries for Sultanas and Currants of the lower grades—1 crown and 2 crown—but owing to some doubt as to the rate of exchange over the fixed price, the matter is in abeyance.

The prices offering from China are—Sultanas, 1 crown, £26 per ton; 2 crown, £30 per ton. Currants, 1 crown, £32 per ton.

Mr. Wing, who intends visiting China at the end of the year to investigate the market conditions for himself, recently sent a trial consignment of Oranges and Pineapples to England, the results have not yet been received by him.

Mr. Wing Dan, manager for Wing, Young & Co., has a firm belief in the future of Australian fruits on the Chinese markets, and suggests the formation of a company consisting of allied Chinese and Australian interests, with showrooms in the East, where Australian goods can be displayed. The company to be subject to strict Government supervision with regard to the class of goods exported, and the Government to pay the cost of advertising Australian goods in the East.

He treated the suggestion of a trade ship with a stock of Australian goods being sent to the Dutch East Indies and China, as an expensive jest. The languages that had to be spoken en route would be a difficulty, unless qualified linguists were carried on the ship.

Agents, he said, could be procured in China to assist in the disposal of goods at 5 per cent. commission, who could be fully trusted to carry out the work allotted them.

LEMON JUICE FACTORY AT MILDURA.

The Mildura Co-operative Co. has shown enterprise in establishing a Lemon juice factory at Mildura. To the end of September several hundred tons of Lemons had been utilised. The manager is Mr. C. Dyason.

NEW FRUIT JUICE COMPANY.

Australian Fruit Concentrates Ltd.

A new company, Australian Fruit Concentrates Ltd., is being formed to profitably utilise fruit juices. The nominal capital is £40,000 in shares of £1 each. Of these 20,000 shares are being offered to the public. The objects of the company are to develop an invention for treating the juices of fruit and other fruit substances by means of which they do not ferment nor deteriorate for a considerable period. No pereservatives are used, and the vitamins are retained. The prospectus sets forth the results of expert tests, and the quantities of fruits likely to be used during the initial stages of the company. These are as follows (in gallons):—Orange juice (38,400); Lemon juice (38,400); Grape juice (9,000); Passionfruit juice (10,000).

The preliminary directors are—Sir Stanley Argyle, M.L.A., Hon. J. A. Boyd, J. C. Young, S. J. Bain. The temporary Secretary is Mr. H. J. Hansen, c/o Victorian Central Citrus Association, Temple Court, Collins-street, Melbourne, from whom copies of the prospectus and all details are obtainable on application.

CITRUS EXPORT.

Declaring that the export of citrus fruit from the Commonwealth is urgently necessary, Messrs. Scott and Edwards, fruit exporters, of 129 King-street, Melbourne, urge that counts under 96 be not shipped, and that the fruit be packed in softwood cases, wired, case complete with colored labels. Oranges should be clipped not pulled, and handled very gently. Regarding the New Zealand market, the firm expresses regret that N.S.W. growers were shipping to the South Island, it being understood that the Federal Citrus Council recommended that N.S.W. consignments should be confined to the North Island.

The firm's shipments to Java and the Near East, on behalf of growers, have been satisfactory.

TOMATO MITES DESTRUCTIVE.

The Tomato, or brown stem mite, is very prevalent among early crops in some parts of New South Wales, and is causing severe damage to young fruit.

In addition to outdoor crops in the early producing districts, it is also appearing in glasshouses in the metropolitan area, and is spreading rapidly.

In the early stages the mite appears like brown dust on the under side of the foliage and along the stems; later it takes on a greener color, and is almost invisible.

The damage it causes, however, is serious, as the leaves curl up and the plant becomes unthrifty, frequently refusing to bloom under the attacks of the mite.

On young fruit the tesselated markings are characteristic of mite attacks. The skin becomes roughened, and the fruit is often malformed.

Control measures recommended by the Department of Agriculture consist of spraying with lime-sulphur (4 oz. to 4 gallons of water). For glasshouse control the use of dry flowers of sulphur has been found to give the best results.

TUNG OIL, for making certain varnishes, is obtained from the tree Aleurites Fordii. The Planting Committee of the Murrumbidgee Irrigation Areas has asked the New South Wales Department of Agriculture for a supply of these trees for testing on different types of soils.

New South Wales.

CROP PROSPECTS IN NEW SOUTH WALES.

Official reports early in September from the State Marketing Bureau give information as follow:—

Citrus.—The dry weather has improved the keeping quality of much of the citrus fruit. It has also favored harvesting, but soil consolidation has in many cases interefered with cultural operations. Practically all varieties of citrus trees have made good growth, and there is promise of a general heavy blossoming. Some of the best of the coastal grown Valencias have been shipped to Canada, and a small quantity of this fruit from Leeton groves has been packed for export.

Apples.—Good bud development on Apple trees is general, except in some of the orchards where heavy crops were carried last season. Early blossoming varieties of Pears are now in full bloom in many coastal centres. Packhams appear to be the variety offering the best prospects in the Batlow district.

Stone Fruits.—High winds and frosty nights caused damage to the blossom of early flowering stone fruits in low-lying coastal areas, and a considerable amount of Peach-bud shedding is reported from Yenda. The extent of the damage will not be known until the fruit has set. Prospects are in favor of a very good Cherry crop throughout the State, and at Young the growers have extensively thinned fruiting wood in order to ensure better quality fruit. In some coastal orchards, early varieties of Peaches have set and prospects in most centres are good.

Apricot trees are developing satisfactorily, but this season's acreage at Griffith is said to have been considerably reduced.

Prunes are showing good bud development and satisfactory blossoming should result.

At this stage most orchardists would welcome a fall of rain.

NEW PRUNE VARIETIES.

Experiments Desired With New Varieties from U.S.A.

ALTHOUGH problems have arisen in the marketing of Prunes now grown in Australia, the need for having the latest varieties is nevertheless felt. At a recent meeting of the Planting Committee of the Murrumbidgee Irrigation Areas, the question was discussed, it being reported that difficulty is being experienced regarding the importation of nursery stock from America and other places. The following varieties were imported some considerable time ago:—Coates 1418, Imperial and Burton; Departmental reports are awaited as to the economic value of these varieties. The Department desires to import for testing purposes the Stanley and Noble varieties of Prunes.

PECAN NUT CULTURE is being conducted in an experimental manner on the Murrumbidgee Irrigation Areas. The growing of Pecans is an immense industry in U.S.A. The New South Wales Department of Agriculture has been testing six varieties, namely:—Curtis, Taylor, Van Diemen, Pabet, Stuart and Success. Experiments so far show that the Pecan nut is less liable to attack by bacterial disease than is the Walnut.

MURRUMBIDGEE IRRIGATION AREAS.

The question of future plantings on the Murrumbidgee Irrigation Areas is one which is engaging the attention of their Planting Committee, of which the Chairman is Mr. C. G. Savage, Director of Fruit Culture for New South Wales.

It is recommended that there be no further plantings of Prunes, Plums, table Grapes and canning Peaches. Further small plantings with Williams Pears might be made safely, but no other varieties should be used except as pollenisers.

With regard to Figs and Quinces, no more should be planted, except in consultation with the canneries.

Under suitable conditions as regards soil and situation, the following varieties of Almonds were recommended:—Hatche's Nonpareil, Brandes Jordan (may be light cropper in places), Large Papershell, Ne Plus Ultra, Harriet's Seedlings, White Nonpareil.

There was apparently an opening for the extension of Apple growing for suitable export varieties.

Restriction of planting of wine Grapes was urged. Growers should confine attention only to Hunter River Reisling, Rutherglen Tokay, Rutherglen Pedro and Doradillos.

Citrus planting could only be extended with caution. Much depended upon the success of export markets. From present indications there would soon be more Oranges produced than could be consumed in Australia.

APPLES IN IRRIGATION AREAS.

The Granny Smith Apple is doing particularly well on the Murrumbidgee Irrigation areas. At Curlwaa, River Murray, the same variety is showing up nicely. Rome Beauty is another variety which yields good crops.

Leeton.—The Leeton P. and C. Association held a successful display of Oranges, Lemons and other fruits on September 18 and 19. There was also a flower section, produce stall, etc.

Cool Stores at Orange.

The Orange and District Cool Stores now have a capacity of 6,500 cases. It was recently decided by the management to add chambers with an additional 5,000 case capacity, making the total capacity of the store 11,500 cases.

NEW PEACH.

Seedlings of Indian Blood Cling Peach are being tried out at the Bathurst (New South Wales) Experimental Farm.

This variety is reported to be a free stone, not a clingstone as previously thought, and that it is less subject to crown gall than other varieties of the species.

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AVOCADOS are being tested out by the New South Wales Department of Agriculture at their Experimental Orchard at Grafton.

HARVESTING STRAWBERRIES.

THE STRAWBERRY SEASON is shortly opening.—A very good picking receptable can be made by putting a handle on an ordinary oblong box of sufficient capacity to hold six or more punnets. This can be moved along in front of the picker, who places the different sized berries in separate punnets. If this is done carefully, all that is necessary when they are carried to the packing shed is to carefully arrange the top row to give it an even and attractive appearance.

Care should be taken to keep the berries of an even grade all through, so that the grower's brand is sufficient guarantee to the buyer, as there is no fruit which suffers so much from being pulled about by intending purchasers as the Strawberry. Another advantage of honest packing is its assurance of quick sales—an important point with such tender fruits.

The crop may be divided into three grades. All damaged berries, and those too small or deformed to be classed as third grade, should be put aside. After packing is finished, the stalks can be picked off these berries, which should then be placed in kerosene tins, to be sold to jam makers by the pound. In seasons when prices are low, third grade berries may be treated in the same way.

PASSION-FRUIT CULTURE.

Method of Trellising and Training.

PASSION VINES should be planted from 15 to 18 feet apart in rows about 10 feet apart; about 300 vines are required per acre. The rows should run north and south when possible, so that the plants get sunlight on each side (states the N.S.W. Dept. of Agriculture).

Trellis posts, spaced from 20 feet to not more than 27 feet apart, should be erected soon after planting. The posts must be firmly rammed and be at least 20 inches in the ground, and not less than 5 feet out of the ground. At each end of the rows there should be a well-staved strain post, so that the trellis, when heavily laden with foliage, will withstand the most severe wind and heaviest rain. The vines are trained on two No. 8 galvanised iron or No. 12 steel wires.

The best method of fixing these, and one which is becoming more popular, is to run one wire through staples on top of the trellis post and the second one through holes bored in the posts 9 inches from the top wire. An alternative method is to run both wires on the top of the posts. Not less than two wires are recommended. The wire must be well strained (through holes bored in the strain posts) to minimise sagging under the weight of the vines.

A light stake, pole, or bamboo is pushed into the ground beside the young plant and fixed to the trellis wire. Training commences as soon as several vigorous laterals are seen developing from the plants. One or two of such laterals are selected and tied every few days to the stake. These may be termed the main leaders, all growths from which are suppressed until the wires are reached. Once they have reached the wires the vines are directed along them as required, and further tying is unnecessary. Laterals will now quickly develop, and a few months later may reach almost to the ground. Under ordinarily favorable conditions a vine planted in October should reach the wires in from twelve to fifteen weeks.

THRIPS IN NEW SOUTH WALES.

Fruit Crops at Goulburn in Danger.

There was a severe visitation of thrips among the fruit crops at Goulburn at the end of September. Plum, Pear and Apple crops are suffering. Apricots escaped, but the fruits now in blossom are in danger. Vegetable and flower gardens are being seriously damaged with thrips.

N.S.W. FRUIT EXCHANGE.

A net profit of £994 for the year ended June 30 is shown by New South Wales Fruit Exchange, which controls the Bathurst-street fruit market. The previous year the profit was £1,978. Dividends of 3¾ per cent., against 7½ per cent. in 1929-1930, absorbed £937, and a balance of £164 is carried forward against £103 brought into the account. The report states that with the reduction of earnings of business tenants the revenue of the company has been depleted considerably. Economies have been nullified by increased taxation.

Capital is £25,000, and there is a reserve fund of £3,395. Freehold property is valued at £29,680. Rents amounted to £4,351.

NEW REGISTRATIONS.

Terry & Horwood, Narrabri (N.S.W.), tobacco seedling nurserymen—Com. 1/7/31. Ptrs.: Robert A. Le P. Terry, Henry M. Thompson, Albert F. Terry, Melville G. Horwood, and Keith H. Cook. Regd. 7/9/31.

Sims Bros., Farm 90, Leeton (N.S.W.), orchardist, etc. —Com. September, 1930. Ptr.: George W. U. Sims. Regd. 11/9/31.

Belmont Orchards Company, The, Farm 155, Leeton (N.S.W.), selling of fresh and dried fruits—Com. 23/7/31. Ptrs.: Leslie M. Robinson and Arthur A. Elliott. Regd. 9/9/31.

Ashford Tobacco Lands Ltd. Capital, £30.000. To grow, manufacture, and deal in tobacco, etc. First directors, R. A. Black, W. Willmott, H. M. McRae, F. T. Satterthwaite, and A. F. Hearne. Registered office, Ashford (N.S.W.).

CORRECTION.

With reference to the proposal from New South Wales at the recent Apple and Pear Export Council meeting, that the grading regulations be altered, a typographical error occurred.

The resolution should have read: "That the tolerance in 'special' grade be increased to 10 per cent., and that the standard grade be allowed to carry 100 per cent. of fruit with a maximum blemish of ¼ in."

PEACH TREES FROM AMERICA.

SOME PEACH TREES of the Hauss variety were imported, some time ago, into New South Wales by the Department of Agriculture, and these have been tested at the Bathurst Experiment Farm.

Reports to date indicate that the variety so far is not very promising, the fruit being irregular in shape. The experiments, however, are being continued.

The Apparent Effect of Mallee Scrub in Causing Frosts.

(By E. S. West, B.Sc., M.S., Officer in Charge Commonwealth Research Station, Griffith, N.S.W.)

INQUIRY INTO THE CAUSES of unusually severe frosts that occur in certain localities on the Murrumbidgee irrigation areas, New South Wales, led to the suggestion that the dense Mallee scrub near these localities may in some way be responsible.

The problem was studied on the Murrumbidgee irrigation areas by exposing minimum thermometers in portable shelters which were themselves placed in selected localities within and without the Mallee scrub.

Fifty thermometers were made available by the Water Conservation and Irrigation Commission, and these were exposed in one set of localities until minimum readings had been obtained for about six clear calm nights; whether a frost was actually recorded or not was considered immaterial. When sufficient information had been thus obtained, the thermometers were removed to a new set of localities.

Lake View Area.

A heavy belt of Mallee scrub about 5 miles long by about 5 miles wide occurs at Lake View. Three-quarters of a mile north of this belt, another large belt occurs, which, in fact, is connected with the first by a tongue of Mallee scrub.

The following shows the mean minimum temperatures after seven calm clear nights in a line of thermometers commencing three-quarters of a mile within the scrub and extending to 3½ miles outside the scrub (in all cases figures refer to degrees Fahrenheit). The position of this line of thermometers was chosen so that the effect of contours would be as small as possible.

Table 1.

Location.	Mean Minimum Temperature.
¾ mile within scrub	29.3
½ mile within scrub	29.6
¼ mile within scrub	28.0
Edge of scrub	30.8
¼ mile without scrub	32.0
½ mile without scrub	33.0
¾ mile without scrub	33.7
1.7 miles without scrub	35.0
2¼ miles without scrub	35.6
2¾ miles without scrub	34.2
3½ miles without scrub	34.6

The minimum temperatures outside the scrub are about 6 degrees higher than those within it. From the edge of the scrub, the minimum temperatures increase progressively up to the station 1.7 miles outside, and the influence of the Mallee appears to be felt three-quarters of a mile away from it. The minor irregularities are due to local conditions other than the Mallee.

The following table summarises the mean minimum temperatures of 38 thermometers taken after seven calm, clear nights exposed within and to the south of the Mallee at Lake View:—

Table 2.

Location.	No. of Stations.	Mean Minima.
In scrub	3	28.9
From edge to ¼ mile from Mallee on level ground or bottom of slope ..	8	31.5
From edge to ¼ mile from scrub on rise	4	33.6
¼-¾ mile from scrub	10	33.3
¼-¾ mile from scrub on rise	4	34.7
Over ¾ mile from scrub in hollows ..	3	33.9
Over ¾ miles from scrub on level country	5	35.2

None of the stations in the Mallee scrub record as high as the lowest station outside it. The stations furthest from the Mallee show the highest minimum temperatures. Super-imposed on this, the stations on rises are warmer than those in hollows. Inside the Mallee, the minimum temperatures were on an average 6.3 deg. F. below the minimum temperatures at stations more than three-quarters of a mile outside.

In table 3, the mean minimum temperatures of 31 stations situated within the Mallee and outside the Mallee in an area to the south-east of this belt of scrub are summarised.

Table 3.

Location.	No. of Stations.	Mean Minima
Bottom of slope in Mallee	2	31.6
On level ground in Mallee	4	32.5
On rise in Mallee	2	34.6
From edge of Mallee to ¼ mile from Mallee	3	34.2
From edge of Mallee to ¼ mile from Mallee on rise	1	36.4
Over ¾ mile from Mallee in hollows ..	4	37.1
Over ¾ mile from Mallee on rather level ground	7	37.5
Over ¾ mile from Mallee on rises ..	5	38.6

The same general relationships are seen in this table as in the previous ones.

Particular mention may be made of a station on the top of a ridge 20 feet high in the Mallee, whose mean minimum was 35.9 compared with a station well outside the Mallee at the bottom of a slope of 30 feet and the centre of the drainage of the surrounding country with a mean minimum of 36.6 deg. F. That is, the influence of the Mallee scrub has quite swamped the influences of the contours.

Table 4 summarises the results obtained from 33 stations distributed through both belts of Mallee at Lake View and through the open country between these belts after five clear, calm nights:—

Table 4.

Location.	No. of Stations.	Mean Minima.
In Mallee	9	29.3
From edge of Mallee to ¼ mile from Mallee	18	31.0
More than ½ mile from Mallee	6	33.2

In this case the country is relatively flat.

A very definite relationship between the minimum temperatures and the presence of Mallee is again apparent. In fact, a critical study of the eighteen stations included in the group within a quarter of a mile of the Mallee scrub emphasises this, as in all cases, thermometers placed near the Mallee register lower temperatures than those placed further away, but within the quarter-mile limit.

On the Lake View to Tabitta road, two small patches of uncleared Mallee scrub occur, each of 100 or so acres in extent.

Table 5 summarises the results of readings of sixteen thermometers after six calm, clear nights:—

Table 5.

Location.	No. of Stations.	Mean Minima.
In or near the Mallee	9	44.7
Away from the Mallee	7	46.8

The Mallee is on higher land than the neighboring open country, but nevertheless the minimum temperatures are lower in or near the scrub than in the lower-lying open country.

A similar study of minimum temperatures in and near Mallee, at Yenda, also leads to the same results, viz., that lower minimum temperatures are experienced on calm clear nights in or near the Mallee scrub than further away from it.

A line of thermometers placed across an open space about 1½ miles long and half a mile wide also supports this conclusion. The country is fairly level, the very slight fall, in fact, is towards the centre of the open space.

The mean minimum readings after six calm, clear nights were as follows:—

Table 6.

Position of Station.	Mean Minimum Temperature.
16 chains within Mallee on western side	38.3
Edge of Mallee on western side	40.5
16 chains from western boundary (approx.) 30 chains from eastern boundary	42.6
24 chains from western boundary (approx.) 22 chains from eastern boundary	42.6
Edge of Mallee on eastern side, on tip of tongue of Mallee protruding into open space	41.5
Edge of Mallee on eastern side, 9 chains east of above in open pocket intruding into Mallee	39.7
18-27 chains within Mallee on eastern side	40.1
42-51 chains within Mallee on eastern side	39.8

The temperatures become increasingly higher as the centre of the open space is approached.

Discussion.

The data here cited clearly indicate that lower temperatures are experienced on calm, clear nights near Mallee scrub than in the open country. Other data obtained would indicate that this is due to the Mallee vegetation itself, and not, for example, to the soil type.

At the present time, some of the Mallee at Lake View is being cleared, and there will be an opportunity of obtaining confirmatory evidence by again exposing thermometers at sites in the cleared portion, in the uncleared portion, and in the original open country, where the readings detailed above were taken, and of ascertaining the effect of the removal of the Mallee.

"FRUIT WORLD" APPRECIATION.

The Editor.

Dear Sir,—"I consider the 'Fruit World' a journal that should be in the hands of every orchardist."

Yours faithfully,
(Signed) "H.D.," Thulimbah, Q'land.

Dear Sir,—Enclosed please find cheque for subscription. I much appreciate the "Fruit World."—(Signed) E. W. WORTLEY, Beechworth.

Some men never hit the mark because they never pull the trigger.

Export of Grapes.

Interesting Information from London.

Cork Dust and Partial Wrapping of Bunches Recommended.

THE FOLLOWING is an extract from letter from Trade Commissioner's Office, dated London July 30, 1931, forwarded to the General Manager, Government Produce Department, South Australia:—

In connection with the packing of Grapes for export, I would report that after making careful enquiry, general opinion is that the box with the centre division holding approximately 20 lb. nett, is the most suitable export package for Grapes.

With regard to packing,

the use of cork dust is recommended as the best method and that partial wrapping of the bunches is necessary, so as to prevent the cork dust adhering. In connection with the marketing of Grapes, it might be of interest to know that the countries whose export season coincides with that of Australia, viz., South Africa and Argentine, are exporting increasing quantities each year, this season's figures being 652,111 boxes (8 to 12 lb.) and 150,248 boxes (20 lb.) respectively, as against Australian supplies of 13,824 boxes. Shipments received from South Africa and Argentine during previous years are also quoted for your information.

South Africa.—1928, 458,334 packages; 1929, 520,264; 1930, 521,882; 1931, 652,111.

Argentine.—1929, 85,000 boxes; 1930, 55,000; 1931, 150,248.

From the above it will be seen that supplies from South Africa are increasing each season, and I learn that there is every prospect of steadily increasing shipments from the Argentine.

The season this year for South Africa commenced with the arrival of a small shipment early in February, and continued approximately to the end of June. Shipments from the Argentine commenced about the middle of March and finished at the beginning of June. The season, so far as Almeria Grapes are concerned, is from September to November. Supplies come to hand earlier and later than these dates, but the period stated above is when Grapes from this source are plentiful. Shipments of Almeria Grapes to the United Kingdom during the years 1926-1930, are as follows:—

1926	538,000	Barrels
1927	891,000	„
1928	1,162,000	„
1929	1,106,000	„
1930	787,000	„

Lisbon Grapes usually arrive in August, but the quality is very poor compared with Grapes from other sources, and the season is a very short one. Supplies received from Almeria, Lisbon, and Argentine are generally sold by auction, although considerable quantities of Grapes from the latter source are sold privately. South African and Australian shipments are also mostly sold by private treaty.

With regard to likely prices, it is somewhat difficult to give you any lead on this point, as so much depends upon quantities available, quality and general landed condition. However, to give you some idea, I have obtained prices as below, which represent general market results:—

Australian (¾ bushel)	10/-	16/-
South African (8 to 12 lb.)	2/6	12/6
Argentine (20 lb.)	7/6	12/-
Almeria (barrel 46 lb. nett)	8/-	20/-
Lisbon	6/-	10/-

Seasonable Spraying Advice.

Control of Insect Pests and Fungus Diseases ∴ Notes from Tasmania

THE Department of Agriculture of Tasmania gives the following instructions how to spray for the principal pests and diseases of fruit trees, which we are publishing for the benefit of our readers:—

Black Spot (Venturia inaequalis).

For the first application "green tip" stage, spray with Bordeaux—6 lb. copper sulphate, 4 lb. lime, 40 gals. water, or lime sulphur 1-10. Second application, "pink" stage, use lime sulphur 1 gal., water 20 gals. Later applications are sometimes necessary when lime sulphur 1 gal., water 60 gals. is effective. Later applications may be used down to 1-100. Early infestations of spot may be considerably reduced by ploughing the leaves in deeply in winter, thereafter cultivating lightly so as not to bring infected leaves to the surface to spread disease. With Pears, diseased wood is a common source of infection and should be removed.

Scale Insects.

"Dormant" stage—lime sulphur, 1 gal. to 10 gals. water or home-made lime sulphur, or oil emulsions, 1 gal. concentrate to 12 gals. water. Apply in early spring when buds commence to swell.

Codlin Moth (Carpocapsa pomonella).

When in "Calyx" stage, spray with arsenate of lead paste 2 lb. to 36 gals. water, or if the powder is used 1 lb. to 30 gals. water. White oil emulsions combined at 1 gal. to 100 gals. spray increase insecticidal properties. The second application should follow three weeks later and then a third application one month later.

Powdery Mildew (podosphaera leucotricha).

The first application should be made when "dormant," and for this iron sulphide, 3 lb. sulphate of iron, 1 gal. lime surphur, 50 gals. water. Second application, "calyx," atomic sulphur, 1 lb. to 12 gals., or lime sulphur, sulphur, flour paste spray as recommended. A good control is obtained by applying an additional autumn spray of iron sulphide.

Woolly Aphis (Schizoneura lanigera).

First "Dormant"—oil emulsions, 1 gal. concentrate to 12 gals. water. Second, nicotine sprays when foliage and fruit are on the trees. For 40 per cent. nicotine sprays use 1 pint to 50 gals. water, plus 3 lb. of soft soap, or home-made sprays of nicotine are recommended.

Pear Mite (Eriophyes pyri).

First, autumn, at leaf fall; second, "late dormant" or bud burst—spray with lime sulphur, 1 gal. to 10 gals. water.

Red Spiders (Bryobia pratensis and Tetranychus telarius).

First, "dormant," oil emulsion—1 gal. concentrate, water 12 gals., or lime sulphur 1 gal., water 10 gals. Second, when foliage and fruit are on the trees—lime sulphur, sulphur, flour paste, flour paste spray, as recommended.

Pear or Cherry Slug (Selandria cerasi).

About the last week in December, when slugs are hatching out, arsenate of lead—paste 2 lb. to 50 gals. water, or powder 1 lb. to 40 gals. water.

Peach Leaf Curl (Taphrina deformans, and other Peach Fungus Diseases).

"Dormant" use Bordeaux mixture, 4 lb. copper sulphate, 4 lb. lime, 40 gals. water, or lime sulphur, 1 gal. to 15 gals. water.

Peach Black Aphis (Myzus cerasi).

"Green tip," 40 per cent. nicotine sprays, 1 pint to 50 gals., plus 3 lb. soft soap, or home-made nicotine spray, as for woolly aphis. Later spraying if necessary.

Apricot Shot Hole (Clasterosporium carpophilum).

"Dormant," Bordeaux mixture, bluestone 4 lb., lime 4 lb., water 40 gals., or lime sulphur 1 gal., water 15 gals.

Armillaria mellea.

During summer months, apply to "bared" roots of affected trees, permanganate of potash 1 oz., water 4 gals.

Black Cherry Aphis.

First, "dormant," oil emulsion 1 gal. concentrate to 12 gals. water; second, "calyx," 40 per cent. nicotine sprays, 1 pint to 50 gals. water, plus 3 lb. soft soap.

The Spray Programme.

A general spray programme for the economic control of the main Tasmanian insect and fungus pests prevalent in an average orchard is appended:—

First Application.—Iron sulphide 1, 3, 50. Late "dormant" stage.

Second Application.—Red oil emulsion, 1-12. Late "dormant" stage.

If mildew or red spiders are not serious pests the respective control sprays mentioned above may be omitted.

Third Application.—Bordeaux mixture, 6, 4, 40—"green tip" stage. If spider and mildew are serious pests, lime sulphur at 1-10 may be used, though perhaps slightly less effective as a spot control.

Fourth Application.—Lime sulphur, 1-20—"pink" stage.

Another lime sulphur at about 1-80 may be required if spot, spider and mildew are serious pests.

Fifth Application.—Arsenate of lead, 1 lb.-30 gals.—"Calyx" stage.

Sixth Application.—Arsenate of lead, 1 lb.-30 gals.—3 weeks later.

The addition of atomic sulphur, at the rate of 1 lb.-12 gals. is useful where mildew is bad. Spider and spot are also checked slightly.

The above programme may be considerably altered and modified to meet local conditions.

Methods of Mixing Sprays.

Lime Sulphur.—Take 10 lb. fresh quick lime and 20 lb. sulphur. Mix into a paste. Boil together in 10 gals. of water for one hour, using an iron vessel. All the sulphur should be in solution. Dilute until showing a baume hydrometer test of 5 deg., which is the strength to be used for scale control, and is applied as a "dormant" spray. Further dilution is necessary for a summer spray when trees are in "blossom" or "foliage."

Table for Dilution.

Reading of Baume Hydrometer.	Winter Strength. Gals.	Summer Strength. Gals.
32 deg.	1-8	1-80
30 deg.	1-7½	1-72
27 deg.	1-6	1-60
24 deg.	1-5	1-50

The majority of good commercial brands of lime sulphur on the market run at about 30 deg. Baume hydrometer test.

Home-made Oil Emulsions.—Boil 2 gals. of oil in a cauldron, together with 2 lb. of soft soap dissolved in 1 gal. of water for 15 minutes. While the mixture is warm, spray through a force pump. Apply 1 gal. concentrate to 30 gals. of water (dormant).

Spraying Hints.

(By A. A. Hammond, Department of Agriculture, Vic.)

(Continued from August "Fruit World, page 573.)

IN the control of codlin moth, competitive experimental tests have been carried out for two seasons at Doncaster and Templestowe. The results of the 1929-30 season have been published, and those for the 1930-31 season will be issued shortly.

The experiments so far have indicated definitely that the oil-arsenate combination is a more effective control than arsenate only. That if applied at the proper strength and a casein spreader is used in the combination no damage is done to fruit or foliage. The use of oil only as a control after the application of an arsenical calyx spray was not satisfactory. It was also found that there was danger of spray damage if more than half a gallon of oil was used to the 80 gallons of spray, although under favorable conditions three-quarters of a gallon to 80 may be safely used.

The use of the casein spreader, with or without oil, prevents the blotching of fruit which not only causes damage in the case of the oil-arsenate combination, but, in all cases, makes the fruit unsightly and gives it the appearance of containing more than the permissible quantity of residual arsenic.

Some of the white oils used had the effect of considerably improving the color of the Jonathan Apples. The fruit had a brighter appearance and colored earlier.

Some authorities believe that the

use of a spreader

has the effect of making the arsenical spray less effective. This may be so, but it certainly is not the case when the oil-arsenate-casein combination is used.

In the use of the combined spray, arsenate-lime sulphur, it is necessary to use a casein spreader to prevent burning. Some arsenates are more acid than others, and when an acid arsenate is used the addition of a casein spreader is essential. One half pound of a commercial casein spreader to 80 gallons of lime sulphur solution is recommended. Skimmed milk, half gallon with ¼ lb. fresh lime to the same quantity of spray, will answer the purpose equally well. When using this combination the arsenate preferably or the lime sulphur should not be added until the last moment before starting to spray.

The Oil-Bordeaux Spray.

Another important dual-purpose spray is the oil-Bordeaux. This is a combined fungicide and ovicide when used to control the green Peach aphis and leaf curl.

Either miscible oil, fuel oil or lubricating oil may be used in this combination. If the non-prepared oils are used it is necessary to make a cold oil emulsion with bluestone and lime and then added the emulsion to the standard 12.8.80 Bordeaux. If miscible or prepared oil is used every gallon of oil must be diluted with 5 gallons of water before being added to the concentrated Bordeaux in the vat.

The agitator should be kept going whilst the oil emulsion is being added.

Weather conditions during spraying

when the trees are in leaf, are very important. Lime sulphur should not be applied when the temperature is above 75 deg. to 80 deg., particularly if the humidity is high. Burning, under these conditions, is almost sure to result, especially if the spray is applied in the afternoon. Neither is it safe to apply this spray in showery weather.

The best conditions for the application is in the morning of a cool, fine day, and all the better if there is a gentle breeze.

A fine mist-like spray is the best for the control of most pests. The only exceptions when a coarse spray may be used with advantage are when spraying to control woolly aphis or applying the calyx spray for codlin moth. To obtain the best results, a pressure of about 300 lbs. to the square inch is necessary.

Spray Programme for Pest Control.

FOR THE CONTROL of the principal orchard pests, the following programme is advocated:—

For codlin moth, spray as soon as blossom petals fall with 5 lbs. of arsenate of lead paste or 2½ lbs. of arsenate powder to 80 gallons of water. The first cover spray should be applied about 12 to 18 days later. For the second, third and fourth cover sprays the oil-arsenate-casein combination is recommended.

The quantities of oil and casein for this combination are:—½ gallon of white oil, ½ lb. of casein spreader to the 80 gallons. The order of mixing is—spreader when the vat is three-quarters full, then arsenate, and the diluted oil last. The engine should be running when the different ingredients are being added.

The use of lure traps, about which more will be said later, is not only helpful as a direct control, but indicates the activity of the moth, by which spraying may be regulated.

Orchard hygiene consists of the collection and destruction of infected fruit and the trapping of caterpillars in paper or other traps placed in the forks or on stems of trees.

BLACK SPOT LIKELY TO BE PREVALENT.

Mr. S. R. Bushnell, managing director of Jaques Pty. Ltd., has just returned from a trip through various orchards in Victoria. He was impressed with the showing of fruit buds and the prospect for a good crop of Apples and Pears for the coming season. Most districts report an exceptionally wet winter, and he stresses the need for the taking of precautions against the prevalence of black spot and recommends growers to spray regularly with Bordeaux or lime sulphur. Some districts last year did not spray at all for black spot, with the result that they lost a fair quantity of their fruit. Growers will be well advised to take every possible precaution this year, particularly in view of the extremely wet winter that has been experienced.

COMMERCIAL NEWS.

Henry Berry & Co. (Australasia) Ltd.: Profit of £36,193 is shown in report for year ended August 15, compared with £56,375 in previous year.

Commonwealth Fertilizers and Chemicals Ltd. earned a net profit of £15,853 for the year compared with £102,621 for the previous year.

Primary Producers' Bank of Australasia Ltd. (The); petition for the winding up of company presented to the Court.

Victorian Producers' Co-op. Co. Ltd., the directors report a loss of £3,437 for year ended June 30.

Port Melbourne Markets Pty. Ltd. Registered office, 271 Collins-street, Melbourne. Registered September 7. Capital, £3,000 in £1 shares. Names subscribed to memorandum: Thomas Stark Kerr 1 share, Hector Vincent Kerr 1 share, Henry William Wearne 1 share, Ernest Victor Wearne 1 share.

Shipping News.

ORIENT LINE COMMEMORATION CUPS.

In 1928, the Orient Line completed fifty years of service in the Australian trade. To mark the occasion the line donated £100 cash and two silver cups, each valued at 25 guineas, to the Royal Agricultural Society in each of the six States as prizes to encourage our export trade.

The conditions provide that judging should be made both in London and Australia, the prize in each case being awarded for the highest aggregate points.

The interest in the 1928 competitions was so great that the Orient Line decided to make an annual donation to every State of two silver cups, valued at 25 guineas each. Victoria chose export butter and export Apples as the subjects for competition.

All information regarding the competitions for Orient Line Commemoration Cups may be obtained on application to the Secretary of the Royal Agricultural Society, Melbourne.

The Orient Cup.

AUSTRALIAN FRUIT EXPORT.

ALTHOUGH it is somewhat early for fruit programmes to be considered, the following in regard to the tonnage arranged through John Sanderson & Co., Melbourne, will be of interest:—

The P. & O. Branch Service via Suez will probably have four of their well-known "B" class steamers available for the carriage of Apples and Pears to London, and possibly also one early vessel available for Pears only. These vessels complete the voyage, Melbourne to London, in 38 days, and they are popular amongst exporters of all classes of perishable cargo. The boats likely to be available in connection with this service are R.M.S. "Baradine" and the s.s. "Barrabool," "Balranald," "Bendigo." Each boat is capable of taking up 120,000 cases from the various ports of Australia. The compartments vary in size from 1,400 cases upwards.

The shipment of Oranges which left Melbourne for London by the "Barrabool" in July was landed in splendid condition. This information was received by cable, and full particulars by mail are awaited.

As well as the "Nestor" and "Ulysses," which are well-known amongst fruit exporters, it is hoped the Blue Funnel Line will have two or more cargo vessels in position for fruit during the coming season, possibly the "Asphalion" and the "Orestes."

For many years this line has enjoyed a good reputation as fruit carriers, and the usual experience in a good season is that the available space is much less than the shippers' applications. The approximate capacity of each of these steamers is 50,000 cases.

The two German lines, viz., the Hamburg-Amerika Linie and the Norddeutscher Lloyd, for which Messrs. John Sanderson & Co. also act as agents, are expected also to have steamers in position for fruit to Continental ports. At present the Hamburg-Amerika Linie expect to have the new steamers "Bitterfeld," "Stassfurt," and "Leuna," and although no vessels of the Norddeutscher Lloyd have yet been indicated, it is expected they will have at least two in the fruit programme. The discharge ports will include London, Liverpool, Glasgow, Hamburg and Bremen.

IMPERIAL FRUIT SHOW.

The Imperial Fruit Show will be held this year at the City Exhibition Hall, Manchester, from October 30 until November 7.

Now in its eleventh year, the Imperial Fruit Show is not only a commercial fruit show, but also a popular public exhibition. Its purpose is not only to promote better methods of cultivation, packing, grading, and marketing of Home and Empire grown fruits—fresh, canned and dried—but also to show the English public the quality and variety produced within the Empire boundaries.

BEES IN THE ORCHARD.

Valuable Aid in Fertilising Blossoms.

IN THE FERTILISATION of fruit blossoms, bees perform an important function in the orchard, and the maintenance of two or three colonies per acre may be recommended as a means of materially increasing the quantity and quality of fruit. The advisability of establishing a small apiary may well be borne in mind at this season of the year. A small apiary has other recommendations, of course, beside that of its benefit to the orchard. Sufficient honey and beeswax will at ordinary times be produced to enable a surplus to be marketed, and the home table may always be adorned by a dish of one of the most wholesome foods nature produces.

The site upon which the apiary is placed need not be in the orchard. A small allotment of ground may be selected where the bees are not likely to be disturbed when cultivating. The land should be fairly level, well drained, and for preference the hives should face the north-east. A trellis of Passion vines around the plot makes an ideal windbreak, and affords protection to the hives both in summer and winter.

The equipment required for the running of a small apiary is neither extensive nor costly. The requisites are mostly standardised throughout Australia, which is an advantage. As a subsidiary industry to orcharding, beekeeping is one of the most suitable, since the hives do not require daily attention, though there are times when prompt attention is necessary, as during swarming or when additional super space is required. It is also necessary for the beekeeper to understand his bees, to get generally acquainted with their traits under certain conditions, and to study the order of the hive within.

Answers to Correspondents

ORCHARD MANURING PRACTICE.

Portland Grower Seeks Advice of Research Committee of the Victorian Fruit Marketing Association.

Reply by Mr. J. W. Bailey.

"J.L.B.," orchardist and Tomato-grower, of Portland, Vic., has written to Mr. J. W. Bailey, Chairman of the Research Committee of the Victorian Fruit Marketing Association, seeking advice as to a manurial programme.

As this subject may be of interest to others, the letter and the reply are published hereunder. "J.L.B." writes:—

Can the V.F.M.A. Research Committee make some suggestions re my trees, the growth of which I am trying to stimulate, and as no noticeable results have followed the special manurial treatment I have given them. The trees are Jonathans. The ground is red, friable; in places deep, in other places clay is down about a foot. Underground drainage is necessary in parts of the orchard: this has been attended to. Other parts have a natural drainage through the porous or friable nature of the clay subsoil on those parts. It is volcanic country—old basalt. Trees are now 10 years old, and have all along made only a steady growth, and some of them are not too well grown; or, while making a fair growth on the leaders, are light and do not thicken out into strong-limbed trees.

I have tried sulphate of ammonia 2 lb. and super. 5 lb. per tree. Also blood manure, as well as blood, bone, etc., from the local freezing works. Nitrate of soda has been applied. Last year I ploughed in a good crop of field Peas on one acre, and in addition gave sulphate of ammonia and super. to some of the trees. I have also given dressings of 1 lb. and more S. ammonia and super. to some young trees, 3 and 4 years old, that are not thriving.

In no case have I ever seen any benefit in manured over unmanured trees in growth, color of foliage, or development of fruit buds. Manures have been applied in various seasons, and on a number of trees—sometimes 100 or more. Applications made in early spring before ploughing; also at ploughing time, manure being put in the furrows. I think there is something about the soil that is the cause of there being no response to manuring, as on several seasons I have made extensive and liberal experiments with S. ammonia on super. manured crops of Tomatoes and Cabbages, also nitrate of soda on Tomatoes, without any visible results whatever.

I have seen S. ammonia give results with Potatoes, with super., on this ground. Some other local orchardists say they have had results from the use of S. ammonia.

There may be orchardists in some district in your knowledge who have similar soil and results, and I would be pleased to hear of their experience, or to have any suggestions made by you as to manurial trials this season. I have recently limed an acre—about 1 ton per acre, and I have super., S. ammonia and freezer blood and bone which I can use. I shall be ploughing in September or October.

These trees are not anything like the size of 10-year-old trees in districts around east of Melbourne, Harcourt, etc.—all trees hereabouts are slow growing and tend to set fruit early.

Answer (by J. W. Bailey).—Judging from what you write, it appears that you have been applying manures too late in the season to get results.

Manures should be applied just before the buds begin to move, that is about late August or early in September. It has been noted that practically no results have been obtained by late applications of manure. We would suggest using some potash (about 1 to 2 lb. per tree) and sulphate of ammonia (2 lb.) in spring and applying the super. with the green crop at the rate of 2 cwt. per acre.

In September, it may be advisable to try ploughing up to the trees and subsequently working the land with shallow cutting implements right through the summer months, so as not to cut the feeding roots, while the trees are making their growth.

If you try these suggestions, we would be pleased to hear the results.

FRUITING OF THE GRANNY SMITH APPLE.

"Please supply me with any information concerning the fruiting of the Granny Smith Apple." ("T.H.G.," Beaconsfield.)

Answer (by Mr. Geo. Quinn, S. Aust. Chief Horticultural Instructor).—Whilst the Granny Smith is being much more favored than formerly, nearly all of the trees met with in our commercially conducted orchards have barely reached the fruiting stage.

Our experience in the State Experiment Orchard at Blackwood has been that the mature type trees in our Apple collection has fruited quite well. It, of course, is growing amongst a hillside block, each tree of which consists of a different variety, so we do not know which sort may be influencing it in the direction of cross-pollination.

In another portion of the orchard in a bitter pit stock trial block we worked over a good number of mature trees of Shockley to Granny Smith about five to six years ago —grafting on to the stumped main arms. These trees are in good land and have grown tremendously. They are mostly on Spy or other blight-proof roots, and some have an intervening stem of another sort—Rome Beauty or Dunn's worked on the Spy, etc. These combinations do not seem to have retarded their growth or fruitfulness in any way. These trees have cropped quite well also, but they grow in a block in each short row of which there is a mixture of sorts consisting of Cleopatra, Jonathan, Spitzenburg, Baldwin, and Shockley, so that here again the question of cross-pollination is befogged.

In regard to pruning, we have treated the old type tree to only moderate pruning, and the young, vigorous growth from the grafts, after the first couple of seasons when reshaping the trees, was uppermost in our minds, we have given the trees considerable latitude. Whilst the leading shoots have been topped, the laterals have only been thinned out and rarely shortened at all.

This latter procedure is, I think, accountable for the good crops collected thus far.—"S.A. Jour. of Agric."

Flowering Dates of Apples.—"Mount Gambier" asks for the flowering dates of varieties of Apples.

Reply (by Geo. Quinn, Chief Horticultural Instructor, in S. Aust. Journal of Agric.).—Cleopatra, October 13 to 30; Delicious, October 13 to 27; Granny Smith, October 10 to 30; Gravenstein, October 13 to 29; Northern Spy, October 15 to 29; Rome Beauty, October 20 to November 9; Statesman, October 17 to November 3; Yates, October 4 to 22; Jonathan, October 8 to 26.

Tasmanian Spraying Chart.

We have received from the Tasmanian Department of Agriculture an illustrated chart dealing with pests and diseases of fruit trees. This information will prove of great value to the fruitgrower during the present season for fruit spraying. We congratulate the Department on the illustrations, and the production is very creditable.

Research into Fruit Production Methods.

Cover Crops—Does Cultivation Prevent Evaporation?—Soil Fertility—Oriental Fruit Moth—Codlin Moth Control.

Scientific Reports from U.S.A.

INTERESTING COMPARATIVE INFORMATION is contained in the 43rd annual report of the Pennsylvania Agricultural Experiment Station as follows:—

The Comparative Values of Various Green Manures in the Formation of Soil Nitrates and Available Humus.—Although the economic value of green manuring has been recognised for many centuries, there are little available data which may be used as a measure of the comparative effectiveness of green residues from various crops in supplying the soil with available nitrogen and soluble humus. In the experiment here summarised, various green immature crop residues were incorporated in the soil at the rate of twenty tons of dry matter per acre. The experiment was carried out in large glass jars kept in the dark for nine months. At the end of this period the organic matter and soluble humus were determined. The soil nitrates were determined at regular intervals. The nitric nitrogen results represent the average pounds per acre found in the soil for a period of eight months. The humus and organic matter figures represent the amount found in the soil at the end of nine months.

Red clover was the most effective leguminous green manure. Among the non-leguminous residues, rape was most effective in supplying soluble nitrogen, and wheat in supplying humus and organic matter. The action of the two classes of crop residues is quite similar, since young, immature grasses contain a high percentage of nitrogen, equal in some cases to the amount in the leguminous plants. (J. W. White.)

The Effect of Inter-Tillage on Crops and Soils; How Often to Cultivate Crops.—This experiment was planned to determine the advisability of frequent cultivation during the dry periods of the summer as a means of conserving moisture and thereby increasing yields. Other effects which have been claimed for cultivation, such as increase in availability of plant foods and higher soil temperature, also were determined. Corn, potatoes, beans, and mangels were grown for four different years. Some plots were cultivated eight times during the summer, others three times, and others were left uncultivated throughout the summer. Weeds were killed on the uncultivated plots without stirring the soil, by cutting them off at the surface of the ground. Cultivation frequently (eight times) has not resulted in an increased moisture content of the surface and subsoil. Slowness of capillary moisture movement is sufficient to prevent rapid evaporation, whether the surface is mulched or not. The quantity of available plant foods, nitrates, and total soluble salts has not been increased by frequent cultivation. The soil temperature was generally slightly warmer on the uncultivated soil than on that cultivated. The yields of corn, potatoes, beans, and mangels have averaged nearly the same, whether cultivated eight times, three times, or not at all. The results thus far indicate that, for the Hagerstown soil series and probably for most other upland soils of Pennsylvania, cultivation need be practised only often enough to control weeds. (F. G. Merkle.)

Soil Fertility in the Apple Orchard.—These several projects deal with various phases of the general problem of orchard fertility. The very dry summer of 1929 served to accentuate the differences due to the varying treatments and to show clearly which methods of management are most successful. In those plots where the organic content of the soil had been built up by growing good stands of cover crops, and especially by turning under heavy sods, there was approximately 80 tons more water per acre to the depth of a plough furrow than where the cover crops had been below average for several years, and the organic matter has been decreasing. As a result, the cover crops in the plots with low organic content were killed by lack of water during the dry weather, while the cover crops in the plots with high organic content made a vigorous growth.

Certain plots have received annual cultivation, with a

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OF THE CROP
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seeded cover crop, for 21 years. Because of differences in location and in fertiliser treatments there have been material differences in the amount of cover crop growth in the various plots. In general the tree growth and yields in these plots for the last ten years closely parallel the growth of the cover crops in 1919 and 1920, the eleventh and twelfth years of the orchard. In other words, we may use the growth of the cover crops now as a fairly reliable index, to foretell the tree growth and yields that may be expected ten years later.

Among those plots which have had annual cultivation for 21 years, only those which have grown heavy cover crops for many years give promise of being able to maintain a desirable plane of fertility during the remainder of the life of the orchard. For several years back the combination of nitrogenous fertiliser with superphosphate has invariably given increased growth of cover crops; it is now giving increased yields of fruit.

Oriental Fruit Moth.—Biological studies have shown that there may be considerable fruit infestation by the first brood larvae. Great variations in the per cent. of infestation have been noted in different orchards or within a single orchard. Some Elbertas showed less than five per cent. injury at picking time, while others showed 25 per cent. or more. The nature of the soil and thoroughness of cultivation may have some bearing on these differences. Twig infestation begins about May 28 and continues until July 15 or later, the peak being reached in June. Fruit infestation starts about June 10 and continues until picking time, becoming more severe with each successive brood. The amount of injury at picking time varies from year to year. Krummels showed 18 to 25½ per cent. injury in 1926, 80 to 83 per cent. injury in 1927, 13 to 18 per cent. injury in 1928, and 25 per cent. injury in 1929. Work has been continued with fermenting sugar baits for trapping the adults. The bait pail method reduces the population of moths considerably, but its failure to reduce the amount of wormy fruit some years indicates the necessity of further investigation. (S. W. Frost.)

Codlin Moth.—In the spring of 1929, codlin moth emergence began on May 26 and ended July 9. The peak of emergence came on June 11. Considerable variation in the date of the peak was shown by larvae hibernating in different situations in the orchard. Evening temperatures were low during the early emergence, and eggs were not laid until June 15. Periods of high evening temperatures coincided with heavy egg deposition, this constituting a factor which must be taken into consideration in timing codlin moth sprays. The summer brood of moths emerged from July 17 to August 6, the peak falling on August 1. Such a long period of emergence complicates control of this brood and points to the logic of attempting complete control of the spring brood. About 65 per cent. of the spring brood larvae produced moths of the summer brood.

A commercially prepared beta-naphthol band was tested for its efficiency in trapping larvae and killing them, thus reducing the number of individuals producing the summer brood of worms. An examination on September 23, 1929, showed all larvae that had been in the bands for two weeks to be dead. Under the climatic conditions prevailing in 1929 this band maintained its killing efficiency through the period of summer pupation. (H. N. Worthley.)

Horticultural Research in Victoria.

Valuable Enterprise by Agricultural Department.

VALUABLE HORTICULTURAL RESEARCH is being conducted by the Victorian Department of Agriculture. In fact, this work is more extensive than is generally recognised. Hence it is a pleasure to publish the following summary:—

Horticultural research in the Victorian Department of Agriculture may be divided into two separate classes. Problems of a non-pathological nature, such as manuring, pollination, etc., are being studied by a keen staff of trained men, who have been attached to the Horticultural Division solely for this purpose, while questions in relation to diseases of horticultural crops are under investigation by the Plant Research Laboratory. Officers of the Horticultural Research Branch and Plant Research Laboratory work in close co-operation, so that each phase of research receives due attention.

The programme of work at present being conducted by the Horticultural Research Branch includes investigations into the following problems:—

1. **Soil Alkali.**—This trouble is being investigated particularly in relation to citriculture, field work being carried out at Tresco, and laboratory work in Melbourne. Very definite information has already been obtained.

2. **Manuring.**—Field fertiliser experiments are being conducted on Apples, vines and Tomatoes in various parts of the State, and these experiments have already yielded

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results of some value. A mineral deficiency experiment on Apples grown in large pots has been initiated, with a view to discovering the symptoms of trees suffering from lack of any particular plant food. These symptoms, when tabulated, will be a valuable guide in diagnosis of soil and nutritional troubles in the orchard.

3. **Biennial Bearing.**—A study is being made of this problem, and efforts being made to evolve practices which will remedy the condition. Manuring, pollination, pruning, thinning, etc., are all being considered.

4. **Bud Development.**—During the last twelve months detailed observations have been carried out in relation to growth and bud development of various fruits. In this work the assistance of the C.S.I.R. has been secured.

5. **Pollination.**—A programme of work has been commenced, the objects being the recording of flowering dates, establishment of self and cross sterility relationships, and the determination of pollen viability of various fruit varieties.

6. **Bud Selection.**—Good types of citrus varieties have been located, and experiments are being conducted in reworking off types to other desirable types. Classification of varieties and standardisation of descriptions is being carried out.

7. **Stocks.**—A number of deciduous fruit tree stocks have been imported from England, and a programme of stock investigation has been initiated. The citrus stock question is also under investigation.

8. **Fruit Storage and Transport.**—The research staff is co-operating with the Council for Scientific and Industrial Research in citrus preservation experiments.

9. **Viticultural Research.**—At the Rutherglen Viticultural Station investigations are proceeding on the subject of affinities, reciprocal suitability of stock and scion, adaptation of stock and soil, ampelographical classification, and much valuable data has already been collected.

Proposed Research Station.—An area of 100 acres of suitable land was acquired in 1929 at Tatura, in the Goulburn Valley, for the purpose of establishing a horticultural research station. Unfortunately, financial exigencies have prevented other than preparatory work so far.

Pathological Investigations.

Investigational work on diseases of horticultural crops being conducted by the Plant Research Laboratory partly in co-operation with the Horticultural Research Branch includes the following:—

1. **Codlin Moth Investigations.**—Experiments at Harcourt have yielded valuable information on the subject of spraying for this pest.

2. **Cockchafer Grubs in Strawberries.**—Control measures have been devised.

3. **Green Peach Aphis.**—More accurate determination of the life history of this pest is proceeding, and experiments are being carried out with egg killing sprays in winter.

4. **Black Spot of Apples and Pears.**—Investigations are proceeding in an attempt to ascertain the time and conditions when overwintering spores are expelled from old fallen leaves. These are being supplemented by spraying investigations by the Horticultural Division.

5. **Raspberry White Root** is being investigated under field conditions, testing the varietal resistance, and the effect of fertilisers and heavy dressings of lime.

6. **Apricot Shothole.**—Work by this branch has evolved suitable and efficient control of this pest.

7. **Transit Rot.**—Work on this disease of Peaches has shown that by pre-cooling and ice-trucking, it may be largely avoided.

8. **Apple Storage Problems.**—Investigation is proceeding on the following storage diseases:—Breakdown, scald, soft scald, Jonathan spot, bitter pit, etc., taking into full

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account the conditions under which the fruit is grown, prestorage factors being very important.

9. **Peach, Pear, and Plum Storage Problems.**—The effect of storage temperature on certain disorders has been determined.

10. **Citrus Storage.**—Investigation of the effect of temperature on the development of various moulds.

* * * * *

It is pleasing to note that fruitgrowers' organisations in Victoria are working in co-operation with the Department to secure best results.

Western Australia

Statistical Review of Fruit Industry.

THE ANNUAL REPORT of the Department of Agriculture of Western Australia for year ended June 30, 1930, states that the Apple crop was far below the average, but this was not unexpected, consequent upon the production of a tremendously heavy crop in the previous season, when the crop was greater by 200,000 bushels than in any previous year, and totalled 1,100,000 bushels.

It is pleasing to know, however, that the stone fruit and Orange crops were the heaviest for very many seasons past, while the Grape crop was distinctly good.

The total acreage under orchards increased last season by 342 from 18,393 to 18,735. The principal increase was due to Apples 424 acres, the area under production for this kind being 10,468 acres. The principal decreases were in Pears and Peaches, with 48 and 42 acres respectively.

The total export of fruit for the year amounted to 227,820 cases, the main items being Apples 159,214 cases, Grapes 43,052 cases, and Pears 22,491 cases.

In spite of the light crop of Apples, which usually means that the fruit is not of as high a quality as in many years of good crops, our Apples still retain pride of place at the head of the price lists in the markets of Great Britain and Europe. The production of dried fruit has increased, with a gross tonnage of 2,137 tons, made up as follows:—Currants 1,514 tons, Sultanas 250 tons, Lexias 373 tons. The aggregate production is 228 tons in advance of the previous year and 540 in excess of that of 1927.

Unfortunately, during the year there was an outbreak of a very serious disease which had previously never been discovered in the State. This is known as "Apple scab," and it is pointed out that if this disease once became established in the State, the losses to Apple growers would be serious in fact, in some countries it is looked on as a more serious pest than codlin moth. In order to prevent the spread of this disease the Department arranged to take steps that the orchard should be placed in strict quarantine and for measures to control and eradicate the disease to be promptly adopted.

In connection with the

Bitter Pit investigations

initiated by Messrs. Carne, Pittman and Elliott, and which resulted in the discovery that the disease was largely a maturity disease, charts to indicate the degree of maturity by comparison with the ground color of the fruit and those shown on the chart were distributed amongst orchardists by the inspectors. Although the colors on the chart were not entirely satisfactory, yet sufficient experience was gained to indicate that the method is a sound one, and, when the charts are improved will be a great advantage when the fruit is ready for shipment.

The decision to grant a license to sell Western Australian wine is proving very helpful to the industry, also that the importation of wines from the Eastern States and overseas is declining, as in the year 1929-1930 there were 23,062 gallons less imported than was the case in the year 1928-1929.

A Note of Warning to Most Fruitgrowers!

If returns have been such that you must
curtail expenditure on **MANURES** . .

Don't Omit Nitrogen

because:—

1. Nitrogen is the chief limiting factor in fruitgrowing.
2. Heavy Winter rains will have depleted the soil of nitrogen.
3. Nitrogen **does** help the set.
4. Loss of vigor and vitality through lack of nitrogen takes years to recover.

Therefore use **some** NITROGEN, and remember that

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Queensland.

The Gympie District.

THE GYMPIE DISTRICT is 106 miles by rail from Brisbane: the principal industries are dairying and Banana growing. The town of Gympie is in the centre of the district, and is situated on the banks of the ever-flowing Mary River.

Figures extracted from the Registrar-General's report show that there are in the Gympie area 5,928 acres under Bananas, producing 1,385,136 bunches, giving employment to 5,000 persons. There are over 500 acres planted with Strawberries, and increasing areas had been planted with citrus, Strawberries, nuts, and Papaws. The fruit industry is controlled locally by the Gympie Fruitgrowers' Association in conjunction with the Committee of Direction of Fruit Marketing. The Gympie fruitgrowers own its premises adjoining the railway station. Bananagrowers pay a per case levy for the management of their output. The output of Bananas from this district for the month of August exceeded 22,500 cases, Pineapples 16,000, citrus 2,000, Beans 3,200, Peas 300, Papaws 500, Strawberries and other fruits 1,000. The value was estimated at £20,000.

Practically every Banana plantation is on a hillside and is worked by hand—hoeing, planting, harvesting, etc.

When the fruit is ready for market the bunches are cut and carried to an elevated staging and from there are carried by pulleys on steel wire to the packing shed, which in many instances is more than half a mile away; the bunches travel at a great speed, and when they are nearing the shed an improvised brake lessens the speed and prevents the fruit from becoming bruised. The fruit is then de-handed, that is, cut from the stalk, and placed on benches, where it is allowed to remain sufficiently long enough to allow for the evaporation of the surplus moisture after which it is graded and then packed for the market. The cases then are stencilled and taken by motor-truck to the railway.

Quite a number of the growers are now planting Queensland Nut trees (Macadamia) among the Bananas, so that when the Bananas are finished the nuts will be bearing, and thus give continuity of income. The demand for the Queensland Nut is increasing every year. The nuts contain more flavor, oil, and nutriment than the Brazil Nut. America has been enquiring about Macadamias recently.

The Pineapple industry is increasing locally. The growing of small crops is also carried on extensively. Seven tons of Canadian Wonder Bean seed were planted this season: the plants are growing well, and the Beans will soon be on the southern markets: the supply for Cup Week should be well up to requirements.

ORANGE JUICE FOR HEALTH.

"Sunshine and out-of-door living are the most effective means of combating tuberculosis and many other constitutional ailments, including rheumatism," states Dr. John H. Kellogg, of Battle Creek, Michigan, U.S.A., for many years director of the Battle Creek Sanitarium. "A man living in a cold climate consumes a large part of his energy in keeping warm, while one living in a mild climate has a lower metabolism rate, i.e., the body machinery is slowed down enough to lessen the wear and tear, but not necessarily enough to impair efficiency. A warm climate encourages activity of the skin and in consequence free drinking of water. This secures thorough washing of the body and keeps the blood free from impurities.

"Citrus fruits," he continues, "laden with vitamins and blood building salts, supply liquid nourishment of the choicest and purest sort. The world affords no better means of satisfying thirst and promoting elimination by the skin and kidneys than Orange juice."

Ideal in Fevers.

Orange juice as a food in fever cases is perfectly suited to the requirements of the patient's condition. A fever patient must have water to carry off the poisons that are burning him up. From four to six quarts of water daily are necessary, says Dr. Kellogg, and Orange juice supplies the finest sort of distilled water. The toxima often destroys a fever patient's thirst, thus making it essential to stimulate the desire to drink. The tart acid flavor of the citrus fruits, particularly the pleasant taste of the Orange, is a factor in furnishing such stimulation. Fever patients must not have excess proteins or foods rich in albumen. Orange juice contains less than one per cent. protein or albumen, so a fever patient could partake of three or four quarts of juice without getting an excess of either of these elements.

In cases of fever the person has very poor digestive power, owing to the lack of gastric juice in the stomach and the other digestive organs. Orange juice is already prepared for immediate assimilation and requires no digestion. The sugar is capable of being assimilated at once by the body cells.

Mother: "I told you to notice when the milk boiled over."

Tommy: "I did, mother. It was ten past seven."

A tired mother was wearied through answering so many questions, that she told her little boy "that curiosity once killed a cat." This impressed the boy, and, after two minutes' quiet, he asked, "Mother, please what was it the cat wanted to know?"

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New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

THE monthly meeting of the Executive Committee of the South Australian Fruit Marketing Association was held at Adelaide on August 28. There were present:—Mr. H. J. Bishop (Chairman), Messrs. R. Willsmore, P. R. B. Searcy, G. W. Selth, G. Mack, A. V. Pitt, A. Filsell, H. N. Wicks, R. B. Pritchard, M. G. Basey, R. C. Knappstein, J. S. Hammat, F. B. James D. W. Hannaford, J. B. Randall, A. C. Petersen, G. Quinn, and the Secretary.

Finance.—Financial statement showing balance in bank and in hand, £303/8/9, was read and received.

Correspondence.—Letters from Messrs. Elder, Smith & Co. Ltd., in reference to new steamship service to Java, Singapore, etc., and also advising that in view of stringent regulations governing importations of fruit and vegetables into the Dutch East Indies a certificate was to be attached to the bills of lading stating definitely that the consignment is "free from fruit flies and other harmful insects, pests, and plant diseases." It was resolved that a copy of the letter be sent to Mr. G. Quinn for his information in regard to the wording of the certificate.

Letter from Mr. G. Selth, tendering his resignation as a member of the Association representing G. Selth & Co. Ltd., which company (in export of fresh fruit) was merged in Paterson & Co. Ltd. as from August 1. It was resolved that the resignation be accepted, and the Committee accept an application for membership from Messrs. Paterson & Co. Ltd. represented by Mr. G. W. Selth.

Levies.—It was decided that the levies for the coming season be fixed at ½d. per case, payable by shipper members and grower members, in accordance with the provisions of rule 32. It was resolved that when sending out notices for the annual general meeting, notice would be given of the amount of the levy.

Pear Shipments.—Letter from Overseas Shipping Representatives' Association, advising that it was considered too far ahead to commit owners re Pear freight for end of January or beginning of February.

Alteration of Rules.—The alterations proposed by Mr. G. W. Selth at the request of Messrs. Paterson & Co. Ltd. were discussed, and it was decided that the rules as at present drafted prevented the Association from being a commercial, trading, or political concern.

Australian Apple and Pear Export Council.—The Chairman, Mr. H. J. Bishop, submitted a full report in regard to the proceedings of the first Interstate Conference of the Apple and Pear Export Council, and Mr. H. N. Wicks submitted a report in regard to the research portion of the work. Mr. J. B. Randell concurred with, and added to report.

Mr. H. G. Colombie.—The Chairman spoke appreciatively of the work done by Mr. Colombie in assisting the formation of the Australian Apple and Pear Export Council, also the South Australian and Victorian Fruit Marketing Associations: the following resolution, moved by Mr. J. B. Randell, was carried unanimously:—

"That steps be taken to make Mr. H. G. Colombie life member of the Australian Apple and Pear Export Council, with a seat on the Executive Committee, and a right to vote at all meetings." The appointment to be retrospective to the formation of the Association.

The thanks of the Committee was expressed to the delegates, Messrs. H. J. Bishop, J. B. Randell, and H. N. Wicks, for their work at the Conference, which was greatly appreciated.

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South Australia.

(By Our Correspondent.)

Renmark (September 20).—The first public run of the large "D. Harvey" citrus-washing and grading plant was on September 11, and much interest was created. Growers spoke appreciatively of the smooth running. This is believed to be the largest plant of its kind in the Commonwealth: over 1,000 cases per day can be dealt with.

After being in the soaking tank the Oranges are brushed, passed through a sterilising solution, dried and polished, and from thence to the graders, the whole process being continuous.

FLOOD DAMAGE TO FRUIT.

Murray Valley Suffers.

Many growers, particularly vinegrowers in Renmark and surrounding districts, suffered as a result of the floods from the River Murray during August. The damage would have been considerably greater but for the work of the settlers in erecting sandbags to keep the water back. Mr. Niehus, a Tomato-grower, whose property is a mile from Renmark, had the whole of his area of 80 acres flooded. The whole of his glasshouses, covering an area of 18,000 square yards with a valuable crop of Tomatoes just turning color were damaged, and at times were two feet under water. These Tomatoes would have been ready for the early Melbourne markets: the crop was valued at over £800.

Waikerie was fairly well protected by a high bank, which was erected by a "working bee" from the district. Orchards on Main Island suffered badly; in some places it was possible to row over portions of the vines and up and down the rows of citrus trees. Late Valencia crops were damaged. At Barmera the spreading of Late Bonney severely damaged the Smyrna Figs estate. Many thousands of Tobacco and Tomato seedlings were also being raised here, and the loss on same will be severe.

Mr. R. A. Cramond, Basket Range, writes (7/9/31):—Too much wet weather is being experienced at Basket Range, and it is delaying cultivation. Everything is promising for a heavy crop of Plums, Apples, Pears and Cherries in this district. It is too early in the season to state much more except the growers are all trying harder to find some method of overcoming biennial cropping of Apples.

APPLES IN SOUTH AUSTRALIA.

The future of the Apple industry is in export, writes Mr. Rodney Fowler, Manager, Government Experimental Orchard, Blackwood, S.A., in the South Australian Journal of Agriculture. The varieties suitable for export are limited to five or six, viz.:—Cleopatra, Jonathan, Dunn's Favorite, Rome Beauty, Granny Smith, and perhaps Delicious or Statesman. Rarely do all these varieties succeed well in the same district, climatic or atmospheric conditions not being always congenial. Cleopatra, Granny Smith, and Dunn's require fairly dry conditions on account of susceptibility to disease, and Jonathan or Rome Beauty require more moisture and a cooler atmosphere than the others to reach perfection.

As the export varieties are also those mostly favored for the home market, with the exception of a few early varieties, such as Worcester Pearmain, William's Favorite, Gravenstein, etc., no other varieties need be considered.

EAT MORE FRUIT.

AFTER HEARING an address on the benefits of a fruit diet, by Mr. J. P. Gibson, the rejuvenated laddie of 64, the "Fruit World's" poet, got an inspiration. Hurriedly eating an Apple while the inspiration lasted, he dashed off the following:—

The curfew tolls the knell of parting day,
  The lowing herd wind slowly o'er the lea,
The ploughman homeward plods his weary way
  And thinks of stew and mutton chops for tea.

The lowing herd, the friskiest of their race,
  The weary ploughman keen and bright of eye,
If they would gobble Apples by the case,
  Eschewing pork and beer and beefsteak pie.

The juicy Grape, the sweet and luscious Pear,
  The full rich goodness of the Apricot—
Old Sol's bright rays of Health imprisoned there.
  Alas! Too few remember this, I wot.

Were I the Mussolini of our land,
  —Fair Austral rich in choice and rarest fruit—
A fruit meal daily would be my command
  —I'd deport all those this edict didn't suit.

STRAWBERRY PUNNETS.

New Packing Regulation in N.S.W.

A regulation published in the N.S.W. Government Gazette, and to be incorporated in the Plant Diseases Act, states that no person shall sell any Strawberries in any package which contains any foreign substance in an amount exceeding three per cent. of the capacity of the package. This action has been taken to prevent the practice of partially filling punnets with fern or leaves, and afterwards topping up with the fruit.

Criticism is exactly like weeds—full of valuable fertiliser. Just plough it under and let it fertilise your thinking.

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Lemon Curing.

IN ANSWER to a correspondent on the subject of Lemon curing, the following helpful hints are published.

Mr. Geo. Quinn, Chief Horticultural Instructor, S.A. Department of Agriculture, advises as follows:—

Harvesting.—Harvest with great care the fruits which have reached normal size and preferably, those which have begun to color. Fruit, full deep yellow in color, will not keep long, and green fruits often do not color up under the treatment given below.

Wilting.—Place fruit in picking boxes or sweat boxes and stand them in a moderately draughty shed or shelter, free from rain, to toughen or slightly wilt for a period ranging from a few days in dry weather to ten or twelve days in damp or humid weather when evaporation is slow—but do not over-dry the skins.

Sorting.—When the skins feel a little toughened (which may be tested by squeezing gently a typical fruit close to a flame, and if spots of oil are not easily expressed as seen by being ignited in the flame, they will be all right), carefully sort over the fruit, discarding for earlier sale those carrying scars deemed likely to admit decay, and pack the sound ones in shallow boxes, say not more than about three fruits deep, and stack the boxes in tiers in the store.

Storeroom.—The type of store room should be an underground or partly underground structure to assist in maintaining an even temperature. I have seen a thick-walled old cottage used with good results. Ventilation and absence of light are important, as is also regulation of draughts and humidity in the atmosphere. Too much draught will shrivel the fruits, whilst too much light or high or fluctuating temperatures tend to premature ripening.

Usually the main crop of Lemons are ready to be harvested for storing about July or August, and the air is not dry then. In fact, some gentle draught is desirable to carry off surplus exhalations from the fruit in store, but as the outdoor temperatures rise, the windows, doors and ventilators need carefully regulating. As the air becomes drier in the store, water is sometimes sprinkled on the floor and walls, and even over the cases themselves to prevent over evaporation.

Usually about three or four weeks after first stacking the fruit in the store, it is necessary to look through the trays or cases to sort out those odd ones which are decaying and which would otherwise breed moulds for the others. Let me recapitulate the main points, which are:—

Gather the fruits very carefully at the right stage.

Wilt off the crispness from the skins.

Sort out the doubtful specimens and store the remainder in shallow containers, in darkened rooms.

At first permit ventilation and afterwards gradually diminish it.

Maintain an even and reasonably low temperature and maintain sufficient humidity in the atmosphere of the store to prevent over drying of the skins. No chemical treatment is necessary to preserve the fruit.

* * * * *

New South Wales Experiences.

The advice of Mr. R. J. Benton, Special Fruit Instructor, New South Wales Department of Agriculture, is as follows:—

VARIOUS METHODS of treating and storing Lemons with a view to keeping them for several months have been tried.

Storing carefully clipped fruit, vaselined and wrapped in paper of one kind or another, in sand or sawdust, and many other methods have not shown any to be superior to placing carefully handled fruit in boxes and simply storing away in a cool place from which light (which darkens the color of the rind) and wind (the effect of which is to harden the rind) are excluded. If only a few boxes are being stored, each box may be lined with paper.

The finest cured Lemons are whitish-yellow, and are cured from green and silvery-green fruit. The trees are picked about every six weeks, clipping fruit about 2⅜ in. in diameter. The fruit should then be graded for color into storage boxes, keeping the yellow fruit together, likewise "silvers" and green colored fruit. The boxes should then be stacked in as cool a position as possible. The yellow fruit should be disposed of first, probably after two months' storage. Green-colored fruit may keep four months and occasionally even longer, but as it has to be moved in marketing and held for retailing purposes for some time, longer storage than four months on the farm is rarely advisable. Seasonal conditions greatly affect the keeping quality of the fruit. Storage in large quantities of fruit which has been harvested after extreme weather conditions is unwise. Such fruit ripens prematurely, and its vitality is greatly below normal.

Curing of Lemons results in an increase of juice with a decreased thickness of rind.

In very dry weather the fruit on the outside of the boxes is subject to a certain amount of wilting. This may be minimised by the use of damped hessian covers to increase the humidity.

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TOBACCO-GROWING.

(By W. J. B. McDonald, B.Ag., Sc., Asst. Inspector of Agriculture, and G. E. Coghlan, Tobacco Field Officer.)

THE TOBACCO PLANT is particularly susceptible to climatic variations, even the cured leaf registering these with unfailing regularity. Being a summer growing plant, tobacco requires a fairly regular incidence of rain during these months. Although the crop will withstand periods of comparative dryness, the resultant check in the regularity of growth results in a degradation of quality in the cured leaf. For this reason 5 inches to 6 inches of rain evenly distributed between the end of September and the end of January is considered an essential in non-irrigable areas. Where irrigation facilities are available, rainfall from the aspect of soil moisture becomes of relatively minor importance. In these areas the clay subsoil is not so essential, while the importance of adequate drainage and freedom from injurious salts is intensified.

In considering the potentialities of any district for the production of tobacco, the incidence of the first and last frosts is an important limiting factor. From the time transplanting of the seedlings commences in November until the end of April when, in normal seasons, curing operations should be practically completed, there should be an entire absence of frosts. While frosts are liable to cause a considerable amount of damage to the young plant, the greatest danger is liable to occur when the almost mature plant is subjected to frosty conditions. At this stage the tissue of the leaf is killed, and when subjected to the curing process, the necessary changes within the leaf cell do not occur. The frosted portions disintegrate, and are entirely lost. A heavy frost just prior to the harvesting of the leaf could result in enormous monetary loss.

In choosing a site for the growth of tobacco some additional aspects have to be considered. Owing to the broad and luxuriant nature of its foliage, the tobacco plant is liable to considerable damage when exposed to heavy winds. To obviate this every protection afforded by the natural vegetation and the contour of the ground surface should be exploited. In certain districts, some measure of protection could be achieved by the growth of a crop such as maize, which could be planted round the edge of the field and strips of which could be interspersed throughout the tobacco crop, every half-chain or so.

To obtain the greatest benefit from the sun, it is advisable to select the site so that the tobacco plant is provided with a northerly or north-easterly aspect. Where possible, planting on a gentle slope is preferable to planting on flat ground.

Varieties.

There is considerable diversity of opinion among growers as to the most profitable variety and, frequently, quantity is attained at the expense of quality. Since the progress of the industry depends on giving the consumer the kind of smoke his palate demands, growers are urged to choose varieties that will produce a better class of leaf. The following varieties, listed in order of preference, are recommended to growers from the point of view of quality of the cured leaf only:—Hickory Pryor, Yellow Pryor, White Burley, Gold Leaf, Adcock, Cash, Yellow Bud Pryor, Hyco, Conqueror, Spotted Gum, Dungowan, and White Stem Orinoco.

The general classification will naturally be modified to suit the different environments encountered in the varying districts of the State. Considering the main tobacco-growing districts in detail, the following classification based on existing practice is suggested as being suited to their individual characteristics:—

North-East.—Hickory Pryor, Conqueror, Gold Leaf, Dungowan, Spotted Gum.

Shepparton.—Gold Leaf, Hickory Pryor, White Stem, Orinoco, Dungowan, and Warne.

Pomonal.—Dungowan, Spotted Gum, Hickory Pryor.

Light Sandy Loams in Other Districts.—Hickory Pryor, Yellow Pryor, Gold Leaf, Dungowan, and Spotted Gum.

Some of the varieties listed have not been widely grown, but are suggested to growers as being worthy of a trial.

Some of the heavier-yielding varieties such as Blue Pryor, P.K., Medley Pryor, and Lacks, although giving a large quantity of leaf per acre, are yielding a type of tobacco which is not calculated to enhance the reputation of Australian leaf among the smoking public.

Care of the Seedlings.

According to weather conditions subsequent to sowing, germination can be expected within three to four weeks early in the season, and in from six to ten days later in the year. Immediately individual plants are distinguishable, any excess population should be removed to secure as far as possible an even distribution of those remaining in the bed. Weeds should be kept in check, as these flourish at the expense of the tobacco seedling. If the beds are sown under hessian, this covering, when the plants are firmly established, should be removed daily for

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gradually lengthening periods until the plants are sufficiently hardy to dispense altogether with this protection.

If indications point to the occurrence of a late frost, the seed-beds should be given a protective covering of some form—straw being a suitable medium for this purpose. In removing any covering provided, due care must be taken not to injure the young plants.

The frequency and time of watering cannot be arbitrarily stated, but must be governed entirely by local conditions, the object always being the maintenance of uniformly moist conditions within the bed.

To avoid the attacks of caterpillar pests, especially the larvae of the potato moth, spraying of the seed-bed three weeks after germination is recommanded. One pound of arsenate of lead dissolved in 30 gallons of water makes a suitable spray. As the seedling becomes stronger, the strength of this mixture can be increased to 1 lb. of arsenate of lead to 20 gallons of water. Spraying should be carried out after watering, and in the event of rain immediately following should be repeated.—"Journal of Agriculture," Vic.

TOBACCO INVESTIGATIONS.

SOME INTERESTING ITEMS regarding Tobacco cultivation are included in the 43rd annual report of the Pennsylvania Agricultural Experiment Station, as follows:—

Investigation and Control of Certain Leaf Spot Diseases of Tobacco.—Additional data show that Bacterium tabacum, the cause of tobacco wildfire, readily over-winters out of doors in Pennsylvania in tobacco refuse, on soil, or on seedbed frames. Soil sterilisation and the use of new cloth, frames, etc., have not been of much avail in preventing wildfire, but removing the seedbeds to new locations, free of tobacco debris, has been effective. Mere change of location, even with indifferent care about sanitary measures, eliminated the disease in several instances. A weekly application of 1—1—50 Bordeaux mixture in the seedbed at the rate of a quart to the square yard has effectively prevented disease development in experiments where beds were purposely contaminated. Calomel applied at the rate of one gram to the square yard also was effective. Further comparison of glass and cloth covers for seedbeds indicates the superiority of the glass. Plants grown under muslin canopies develop disease free. In co-operation with the Departments of Agronomy, Agricultural and Biological Chemistry, and the United States Department of Agriculture. (W. S. Beach.)

Effect of Fertilisers on Yield and Quality of Pennsylvania Cigar-Filler Tobacco.—In order to meet the demand for better quality in cigar-filler tobacco, the field experiments during the past two years have included a study of the effect of varying amounts of potassium on yield and quality. It was found that an excessive supply of potassium lowered the yield somewhat, and that the taste, aroma, and combustion were not improved. It was clearly established, however, that the amount of potassium now used by the growers of Pennsylvania—70 to 100 pounds to the acre—is not sufficient for best results; at least 150 pounds should be used. (Otto Olson.)

Variety Tests of Tobacco—High Nicotine Tobacco.—The breeding of Nicotiana rustica, a species of tobacco having a high nicotine content, has proceeded since 1915. The object is to develop strains of very high nicotine content for use as an insecticide. The leaf yield of this species, however, has been considered too low to make it a paying crop for the extraction of nicotine sulphate, but it was found that dust made from this tobacco, when mixed with lime and water, has superior insecticidal value. There is a possibility that an industry may be founded on this discovery.

The increasing demand for mild cigars has led the Experiment Station to undertake the breeding of low nicotine content strains of the two varieties most commonly grown in this State—Pennsylvania Broad, or Seedleaf, and Pennsylvania Havana Seed. Various strains of these are being bred for quality, disease resistance, and yield. Each year, seed from the best strains are supplied to the Tobacco Growers' Associations in the State, for general distribution. (Otto Olson.)

SUGAR REBATES.

AT its meeting in Melbourne in September, the Fruit Industry Sugar Concession Committee decided that, until further notice, the domestic rebate of £6/5/1 per ton will be paid to all bona-fide fruit processors under the conditions which have applied to this rebate for some years past. The special condition applicable under the new sugar agreement to this rebate, viz., that the processor must pay certain minimum prices for fresh fruit, relates to the incoming season's fresh fruit crop, and the Committee will announce such prices in the near future.

Fruit processors may obtain prompt payment of the domestic rebate by sending the usual declaration form to the Chairman, Fruit Industry Sugar Concession Committee, c/o Department of Trade and Customs, Canberra. Claims may be submitted at weekly or monthly intervals. Weekly claims should be in respect of the week ended at the close of business on each Saturday. Monthly claims will cover the calendar month.

The Committee, however, is only responsible for payment of rebate on sugar used as from September 1, 1931, in the manufacture of fruit products, and which was purchased at £36/11/9 per ton.

Export sugar rebates will be paid by the Committee, and the necessary claims should be furnished to the Collector of Customs as hitherto.

The Committee considered the allocation of the additional sum of approximately £110,000 per annum that has been provided under the sugar agreement for assistance to the fruit industry. This matter will be dealt with at the next meeting of the Committee at Melbourne on October 14, 1931.

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Our three Nurseries, situated 30 miles apart, have a capacity of well over 4,000,000 plants. The varieties grown are Conqueror, Adcock, Warne, Hickory Pryor and Yellow Pryor. Prices range from 17/6 per 1,000, according to quantity Book your order now, and save disappointment when planting time arrives.

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New South Wales.—Buzacott & Co. Ltd., 7-11 Market St., Sydney.

South Australia.—Silbert, Sharp & Bishop Ltd., 283 Rundle St., Adelaide.

Tasmania.—Max Geeves Pty. Ltd., 4 Davey St., Hobart.
R. D. Hassell Pty. Ltd., 31 St. John St., Launceston.

Queensland.—Buzacott's (Queensland) Ltd., Adelaide St., Brisbane.

West Australia.—H. J. Wigmore & Co., 613 Wellington St., Perth.

Victoria.

VICTORIAN FRUIT COUNCIL.

THE fourth meeting of the Victorian Fruit Council was held at Melbourne on September 22. There were present: Messrs. A. E. Hocking (chairman), E. H. Hatfield, L. Pepperell, W. A. Thiele, J. A. Parkes, W. J. Foster and the Honorary Secretary, Mr. J. G. Aird. Apologies were received from Messrs. J. M. Ward and R. E. Boardman.

It was decided to appoint a committee consisting of Messrs. Parkes, Thiele, Hatfield and Foster, to formulate a research programme for the fruit industry, in cooperation with the Department of Agriculture.

It was decided to request the Minister for Customs to reduce the duty on "Fluxit" to 10 per cent.

The Northern Victorian Fruitgrowers' Association wrote asking whether the eight associations affiliated with that body would be eligible to join the Council. It was resolved to reply that under the constitution it would be impossible for the eight individual associations to join but that the Northern Victoria Fruitgrowers' Association, being a welfare association, was eligible.

A committee was appointed to investigate the possibility of forming a forwarding company to handle interstate fruit.

Fruit propaganda.—The chairman spoke appreciatively of the work of Mr. J. P. Gibson in addressing industrialists, city clubs, etc., advocating the value of fruit as a diet. A committee was formed to collect funds from all interested parties to expand this valuable propaganda work.

SOUTHERN VICTORIAN ORCHARDS.

Will There be a Visitation of Thrips.

Orchards are Looking Well.

OUR travelling correspondent reports as follows:—

I notice the hot north winds we had previous to Show Week in September, had put the old fear into the fruitgrowers; although they wanted some fine weather, they certainly did not look for north winds and thrips. There is quite a lot of them in Hurstbridge and Arthur's Creek district, as well as Doncaster and Ringwood. Vermont district is also getting its share, and by some growers' opinion so are other districts as well; no doubt it will be bad if we do not get some showery weather, as during the blossom and setting of fruit is a very anxious time for the fruitgrower. Providing we get good weather and no north winds, there is every indication of a very fine crop as the blossom is so very healthy and strong, and given a chance, things must come good.

Jonathans have at last come up to 10/- per case for choice, as they are getting very scarce; 9/- and 9/6 is market price, but some growers are getting 10/- for a few cases every morning; second grade is worth 7/-, 8/- and 8/6, so I don't think, taking all in all, growers have much to complain about. Cookers have eased in price as the market beat the knowing ones who kept cooking Apples and sold out their Jonathans, as cookers

The Manure for your Orchard
must be rich in **POTASH**

An average crop will remove, **in the fruit alone**, the following amounts of plant food.

	NITROGEN lbs.	PHOSPHORIC ACID lbs.	POTASH lbs.
APPLES -	105	35	145
ORANGES -	36	16	42
PEACHES -	76	18	72
PEARS - -	70	27	107
PLUMS - -	30	9	39

On top of this, you must allow for the development of the tree, in which phosphoric acid is most important, although Potash and Nitrogen must also be used. See that you feed the tree as well as the fruit.

Muriate and Sulphate of Potash, obtainable from all fertiliser merchants.

If you have any manurial problems, drop a note to Department A, at the address below for an honest opinion by men of scientific and practical experience.

Pacific Potash Ltd. (Australian Office) 711 O'Brien House, Young Street, Sydney.

were worth up to 10/- per case six or eight weeks ago, but have dropped a couple of shillings lately.

Tomatoes.—I understand the Tomato growers are not planting so heavily this season as there is only about half the quantity of empty cases being sent away to Echuca and Bendigo districts.

Messrs. A. Millis & Sons have had quite a nice picking from their glass houses at Bacchus Marsh, and will be starting on the second plants' picking in a few weeks. We wish them every success in this venture.

PRIMARY PRODUCERS' BANK.

Regret is generally expressed that the Primary Producers' Bank has ceased to function. The head office, also branches in various country districts, have been closed. The organisation is in process of being wound up. The depositors will need to be paid in full, and the shareholders as yet do not know the extent of the calls, if any, on unpaid capital.

BETTER FARMING TRAIN.

Visit to Victorian Citrus Districts.

The "Better Farming Train" is thoroughly appreciated by primary producers. The thirty-third tour is now being organised, the programme being as follows:—Tuesday, October 20, Dingee; 21st, Kerang; 22nd, Murrabit; 23rd, Swan Hill; 24th, Pyramid; Monday, 26th, Rochester; 27th, Gunbower; 28th, Cohuna; 29th, Lockington.

Citrus and other growers, also farmers in these districts, will greatly enjoy the visit of the "Better Farming Train" and the lectures by the experts.

MELBOURNE ROYAL SHOW.

EXCELLENT QUALITY deciduous, citrus and dried and canned fruits were on view at the Royal Agricultural Show, Melbourne, at the end of September. Owing to the adverse season, Apple exhibits were fewer in number than usual. The absence of any entry for the Lord Novar shield was regretted.

Mr. J. D. Grant won first and second prize in the Orient Company's competition: the winning exhibit, which consisted of Sturmers and Jonathans, gained 91 points in Melbourne, and 88 in London: the second exhibit was of Democrats and Cleos., receiving 88 points in Melbourne and 83 in London. The Two Bays Nurseries and Orchards Co. were third, the points being: Melbourne 94, London 74.

Excellent packing and grading were features in the competition for the shield presented by the Fruit Exporters' Handling Committee for the best case of Apples, open to State school pupils attending the packing classes conducted by the Department of Agriculture. Points were gained as follows:—1st, Harcourt North, 94; 2nd, Hastings, 92; 3rd, Pakenham Upper, 90. Individual prize-winners were:—1st, Laurie Denham, Tyabb (97 pts.); 2nd, Winnie Francis, Hastings (96 pts.); 3rd, Ken, Jones, Harcourt North, 94 pts.

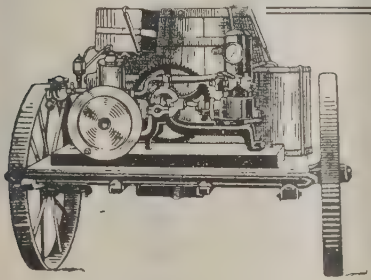
In the dish classes there were nice specimens of Stewarts, Statesman, Londons, Jonathans, Yates, Rome Beauty, etc. The Sturmers and Stone Pippins exhibited by W. H. and D. F. Calvert, of Tasmania, were of very superior quality. Prize-winners in this section included W. J. Whicker, J. D. Grant, P. May, Tainton & Sons, O. A. Harding, Two Bays Nurseries and Orchards Co., W. H. and D. F. Calvert, L. M. Watt, J. D. Brown, K. Cleine.

In the Pear section, the varieties included Broom Park, Packhams, Madam Cole, Winter Nelis, B. Bosc, etc., the prize-winners being W. A. Thiele, W. G. Whicker, A. E. Thiele, Tainton & Sons, Pryce May, The prize for collection of Nuts was won by C. J. Monaghan.

Citrus Fruits.

While the fruit shown was of good quality, the number of entries was disappointing, in view of the fact that citrus fruits are now in season. For the Rupert Watson shield, the Murrabit Packing Co. came first, with 90½ pts., the varieties including Washington Navels, St. Michaels, Ruby Blood, Marsh's Seedless Grapefruit, Lemon (Lisbon, Villa Franca), Emperor Mandarins, etc. The Mildura and District V.C.C.A., with their attractive display, came second with 85 pts.

In the competition for two cases export Oranges, one wrapped, one unwrapped, the Irymple Packing Pty. Ltd. came first with 93 pts., Aurora Packing Co. second with



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Districts, all Climates
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List, etc., Free.

GOODMAN'S

Picnic Point
Nurseries
BAIRNSDALE
VICTORIA.

81½ pts., and Old Mildura Estate third with 78 pts. The Murrabit Packing Co., with a very superior entry, was disqualified for not complying with the conditions of the schedule as regards wrappers.

For Grapefruit the first prize winner was E. F. Page, who also won several other prizes. Prize winners in other sections included those already mentioned, also D. Pomeroy, Newton Bros., J. Lochhead, L. A. P. Webb, G. H. Windsor, R. D. Hollins, V. Roberts.

Dried Fruits.

Collection of Sultanas, 2, 3 and 4 crowns; Currants, 2, 3 and 4 crowns, and Lexias, 4 and 5 crowns, 56 lb. box of each; Irymple Packing Pty. Ltd., and Aurora Packing Co. Pty. Ltd., equal firsts. Collection of Raisins, Sultanas, and Currants, 5 lb. of each; Irymple Packing Pty. Ltd. Collection of Apricots, Peaches, Pears and Prunes, one standard tray of each: Aurora Packing Co. Pty. Ltd., 1; Irymple Packing Pty. Ltd., 2. Walnuts, 56 lb. box: C. J. Monaghan.

The Victorian Dried Fruits Board had a very attractive exhibit of Currants, Sultanas and Lexias, in the Government Pavilion.

Excellent quality citrus fruits were noted in the display by the State Rivers and Water Supply Commission. Also in the district displays of Wangaratta and Swan Hill, citrus fruits formed a pleasing feature.

PERSONAL.

Mr. Henry Schweiger, general manager of the Royal Agricultural Society, collapsed at the opening of the Royal Agricultural Show. He was taken to a private hospital. His condition is very low.

The Secretary of the R.A. Show, Mr. Monod, carried out his duties admirably.

GOULBURN VALLEY FRUIT PROSPECTS.

Indications are in favor of a good crop of Apricots in the Shepparton district, according to advices received from Mr. W. A. Rolfe, Orchard Supervisor.

Pears promise well.

The early Peaches look like a light crop, as most of the blossom buds fill out. There has been a fair amount of bud shedding with all the Peaches; but the other varieties should be all right, with the exception of Phillips.

Plums and Prunes promise well.

Sultanas have nearly all been grubbed out.

The citrus crop will probably be lighter, as many trees have suffered from excess water.

This is considered to be the wettest winter in this district for 50 years.

SOMERVILLE.

The annual meeting of the Peninsula Co-operative Fruitgrowers' Association was held at Somerville on September 9. About 70 growers were in attendance, thus demonstrating renewed interest in co-operative activity. New capital to the extent of nearly £300, was subscribed in the room.

The balance sheet showed a nett loss on the Somerville branch of £4/13/10, and a profit on the Hastings branch of £72/4/-.

The following directors were elected:—C. M. Griffeth (chairman), H. P. Barber, J. Scott, A. S. M. Harrison, B. Caldwell, W. P. Coleman, The manager is Mr. T. Butler.

PYSECT or PESTS?

—you can't have both!

Pysect Concentrate, the original British Pyrethrum Insecticide, definitely supersedes nicotine, arsenic and the older washes. More potent than nicotine, it is non-poisonous to warm-blooded animals and harmless to vegetation—even the most tender shoots. Colour and flavour of the fruit are not affected. No effect upon bees. Trees may be sprayed in blossom.

A one-solution spray, it mixes readily with water to form a perfect emulsion.

No soft soap required.

SHIELDS THE PLANT
PYSECT
DESTROYS THE PEST

Available from—
E. HOLROYD PAGE,
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Pysect
DEATH TO PLANT PESTS
CONCENTRATE
BRITISH PRODUCT
Distributors Wanted in all Districts.

Tomato Culture.

VERY INTERESTING INFORMATION regarding Tomato culture was gathered last season at Bendigo, Vic., by Mr. A. G. Strickland, M.Agr.Sc., Science Field Officer for the Victorian Department of Agriculture. A manurial programme was carried through.

The variety used throughout the fertiliser plots was "Yellow Leaf," a strain of Large Red. The plants were raised in seed beds previously sterilised with formalin in order to reduce the disease infection. Planting in the field was carried out at a distance of 2 ft. between the plants in rows four feet apart, and plants were staked and pruned to two or three stems.

Pest Control.

Tomato Moth and Other Cutworms do Much Damage.

In order to check the ravages of the Tomato moth and other cut worms, the plants should be staked, otherwise the stems straggle across the ground, making a control programme impossible.

Grubs may be checked by spraying with arsenate of lead—1 lb. (paste form) in 20 gallons of water—or by dusting with arsenical preparations. On the plots, dusting was found to be more convenient than spraying, and a proprietary dust, containing 25 per cent. arsenate of lead, 8 per cent, copper carbonate, and 40 per cent. sulphur, was used on the young plants, commencing a week or so after transplanting to the field. After the fruit had started to form, a stronger dust, containing 50 per cent. arsenate of lead, and the same quantities of copper carbonate and sulphur, was used. The application of dust was carried out at intervals of about three weeks, according to the suitability of the weather. Under the staked conditions, very efficient coverage was found possible.

Variety Trials.

The southern portion of the field was devoted to the trial of twelve varieties, which were planted in plots of the same size as those used in the fertiliser trials. As before, the series was laid out in triplicate.

The varieties comprised nine early and mid-season strains, and three late varieties, listed below:—

1. Marglobe.
2. South Australian Dwarf Red.
3. Chalk's Early Jewell.
4. Orange Prolific.
5. Large Red A.
6. Large Red B.
7. Wilding's Prolific.
8. Pale Leaf.
9. Creeper Dwarf.

Late varieties

10. Norduke
11. Norton
12. Gee's Late

Manurial Treatment.

The variety plots received uniform fertiliser treatment, i.e., complete manure—superphosphate, 10 cwt. per acre, and sulphate of potash, 3 cwt. per acre—shortly after planting, and sulphate of ammonia, 3 cwt. per acre at the end of January.

The soil is similar to that on which the fertiliser trials were situated.

Summary.

1. **Fertiliser Trials.**—Owing to the prevalence of various diseases, no conclusions could be drawn from the fertiliser experiments.

2. **Diseases.**—The relative importance of various diseases—insect, fungus, and constitutional—has been discussed. Excellent control of Tomato moth was achieved.

3. **Variety Trials.**—Large Red and Pale Leaf, both of which are very popular in the Bendigo valley, have given the highest yields. Three Fusarium-resistant varieties of American origin have given disappointing returns, chiefly owing to their susceptibility to spotted wilt.

Tomato Plants

Strong Plants Raised and Grown in Sterilised Soil, thus taking every precaution against disease
Plant now the following varieties:

LARGE RED, SOUTH AUSTRALIAN DWARF, ORANGE PROLIFIC, BURBANK
and other varieties.

Grown from Selected Seed of our own saving.

Packed and sent anywhere. Prices for large or small quantities on application to:

Wm. Bone & Sons
880 Glenhuntly Rd., Carnegie, S.E.9., Victoria

Tomato Plants

IMPROVED LARGE RED, EARLIANA, BURBANK, IMPROVED BURWOOD WONDER, ORANGE PROLIFIC.

Grown from specially selected seed in cases containing 200 plants, 25/- per 1,000, packed on rail.

Cruickshank Bros.
Wholesale Nurserymen,
Wheatley Road - Bentleigh - S.E.14
Stand—Victoria Market, 36 E Shed

Tomato Plants
Well Hardened in New Cases of 200

LEADING VARIETIES.
Hutchinson's Special L. Red.
Burbank Improved.
Aust. Large Red. Burwood Wonder.
Velocity. Wilding's Prolific.
South Aust. Dwarf.

FOR LATE PLANTING—
Orange Prolific. Lysterfield.

PRICE ON APPLICATION.

HOWARD HUTCHINSON
Wholesale Nurseryman
"Fernshaw" Bambra Road Caulfield, S.E 8

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

NEW SOUTH WALES.

Sydney:
Chilton, F., City Fruit Markets.

VICTORIA.

Melbourne:
Cave, F., & Co., Melbourne.
Davis, J., Pty. Ltd., Wholesale Fruit Market.
Millis, A., & Sons, Wholesale Fruit Market.
Lister, G., Wholesale Fruit Market.
McLean, N. N., Pty. Ltd.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Wholesale Fruit Market.
Renouf, R., Wholesale Fruit Market.
Ross, J. W., Wholesale Fruit Market.
Silbert, Sharp & Davies, Wholesale Fruit Market.
Stott & Son, T., Wholesale Fruit Market.
Tim Young & Co. Pty. Ltd., Wholesale Fruit Market.
Vear, F. W., 49 William Street.
Wilson, H., Wholesale Fruit Market.
Woolf, G., Wholesale Fruit Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Wholesale Fruit Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., Temple Place, Macquarie Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

GREAT BRITAIN.

London:
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
The Port of Hull, London and N.E. Railway. Rep., Burns, Philp & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
Johnson, T. S., & Co.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Astheimer, P. H., & Son, Fruchthof.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof.
Timm & Gerstenkorn.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.

NEW SOUTH WALES.

Sydney (25/9/31).—Apples, local, eating, Del. 7/- to 13/-, few 16/-; G. Smiths 6/- to 13/-, few 15/-; Tas. Demos. 7/- to 10/-; Croftons 6/- to 10/-; Jons. 5/- to 9/-; Scarlets 5/- to 9/-, few 10/-; F.C., green 7/- to 9/-, few 10/-, colored 4/- to 6/-; Sturmers 3/6 to 8/-, other vars. 3/- to 7/- bush. case. Mangoes to 7/- half-bush. case; Loquats, Mammoths, 5/- to 12/-; Commons 3/- to 4/- half bush. case; Passionfruit, local 2/6 to 9/-, few 10/- per half bush. case. Papaws 5/- to 11/- case; Pears, Tas. Winter Coles, W. Nelis and Jos. 6/- to 11/-; Vic. 6/- to 12/- bush. case; Pineapples 6/- to 9/-, few 10/- case; Tomatoes, Qld. 4/- to 14/-, repacked to 17/-; local, hothouse to 20/-, few 22/- half bush. case.

WEST AUSTRALIA.

Perth (19/9/31). — Apples, Dunns, dumps 6/- to 10/6 (others from 4/-); R. Beauty 6/- to 9/- (special to 11/-, others from 4/-); Yates 6/- to 11/- (others from 4/-); G. Smith 7/- to 15/-; Cleo. 5/6 to 9/- (special to 11/6, others from 4/-); Doherty 4/- to 8/6; other vars. 4/- to 10/6; Citrus, Navels, flats, 2/- to 5/- (special to 6/6); dumps 4/6 to 9/- (special to 10/6, others from 3/6); Oranges, plain, 2/- to 3/-, 3/6 to 8/6; Mandarins, flats, 4/- to 8/-; Lemons 1/6 to 3/6. Tomatoes 7/- to 12/- case; special to 13/6, and others from 5/-.

SOUTH AUSTRALIA.

Adelaide (24/9/31).—Apples (eating), 10/- to 11/- case; do. (cooking) 8/- to 10/-; Lemons 3/-; Oranges (Common) 3/- to 4/-; do. (Blood) 4/-; do. (Mandarin) 7/- to 8/-; do. (Navel), 6/- to 8/-; do. (Poorman) 5/- case; Pears (eating), 10/- case; do. (cooking) 7/-; Pineapples 12/- case; Tomatoes 14/- to 18/- half case.

VICTORIA.

Melbourne (26/9/31).—The following figures are supplied by the Wholesale Fruit Merchants' Association:—Apples, 4/- to 7/-; specials higher. Bananas: Queensland, 9's and 8's, 15/- to 16/-; 7's, 12/- to 15/-; 6's, 9/- to 12/- per double case; selected fruit for country trade higher; rust-affected lines lower. Cucumbers: Queensland, 8/- to 10/-. Grapefruit, 6/- to 9/-; few specials higher. Lemons, 2/- to 4/-; few higher; hardly any demand; Navel Oranges, 4/- to 8/-; few specials higher; Common Oranges, 3/- to 4/-; Mandarins, 3/- to 6/-; small almost unsaleable; Pineapples, 8/- to 9/-, few

FRUIT TREES

ONE GROWER SAYS—
"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

10/- per double case; Passionfruit, best to 20/-, few specials higher; Tomatoes, South Australian, 20/-, some specials higher; do., West Australian, best, to 12/- per half case, repacked ripe higher.

The Melbourne manager of the Federal Citrus Council of Australia reports that sales were as follow:—Navel Oranges, average standard, unwrapped, 60-68, 4/-; 75-96, 5/-; 112 up, 6/-, with odd sales to 7/-; faulty lines lower; selected unwrapped lines, 5/-, 6/-, 7/- and 8/-, with odd sales to 9/-; few selected wrapped lines, 6/-, 7/-, 8/-, 9/-, with odd sales to 10/-, and some to 11/-. Lemons, 3/- to 5/-; few specials higher. Grapefruit, plains, to 9/-; standards, 9/- to 14/-; few selected lines higher. Seville and Poorman Oranges, very limited demand, large (to 84 count), few to 6/-; small not in demand. Mandarins, average quality, best counts, few to 5/-; small, dry, puffy lines unsaleable; Common Oranges, 3/- to 5/-; a few specials, 6/-.

RETAIL FRUITERERS' ASSOCIATION.

The monthly meeting of the Melbourne and Metropolitan Retail Fruiterers' Association was held on September 3, a fair attendance of delegates being present.

The Secretary reported having attended a conference convened by the Victorian Fruit Council, when Mr. J. P. Gibson had spoken of the value of fruit as a food, not simply as a luxury, he being a living example of the benefits of a fruit diet. It was decided to ask Mr. Gibson to attend the next meeting.

Delegates reported many cases of theft at the Victoria Market, and the Secretary stated that although the City Council and the Police Department were paying particular attention to the matter, thieving was still rampant; recently a fully loaded motor-truck was stolen and no trace of it had been found yet.

Comments on the Retail Fruit Trade.

Business in the retail trade is at a very low ebb, and many retail fruiterers are being forced out of business owing to the general depression, and the long wet season which has forced the prices of vegetables so high that many people are able to purchase only in very limited quantities.

There has not been much variation during the month in the price of Apples or Pears, which are reasonable for this time of the year, and although Oranges, Bananas, Pineapples, and Passion Fruit have been very cheap, the public have not the money to take full advantage of the position.

Lemons are still in abundance, and although Oranges for preserving are still plentiful, there is practically no demand. Fruiterers will welcome the warm weather, and hope that it will assist a little to revive trade; ours is one of the trades that should benefit from the warmer temperatures.—Edw. W. Thompson, Secretary, Melbourne and Metropolitan Retail Fruiterers' Association.

QUEENSLAND.

Brisbane (24/9/31).—S. Aust. Lemons 11/- to 12/- case; S. Aust. Navel Oranges 10/- to 11/-; Qld. Navel Oranges 8/- to 10/-; Qld. Oranges, large size and good color, 7/- to 8/-, small 4/- to 5/-; Mandarins, Glens, large 10/- to 12/- case, small 5/- to 8/-; Emperors, large 5/- to 9/-, small to 6/-; Scarlet, large 8/- to 10/-, small 4/- to 6/-; Waratahs 8/- to 11/-; Thorney 4/- to 6/-; Ellendale 5/- to 7/-; Feutrels 3/- to 6/-; Kings 6/- to 9/-; Cantons 4/- to 6/-; Grapefruit 2/- to 3/6 half case; Lemons 2/- to 4/- half case; smooth leaf Pines, large size 2/6 to 3/6 case; medium 3/- to 5/-; Ripleys, from 3/- to 5/- case; Joffa Oranges 8/- to 9/- case; Passionfruit, first grade 8/- to 12/-, second grade 4/- to 6/- case; Papaws, 1/6 to 2/6 case, colored 3/6 to 4/-; Custard Apples, 3/- to 4/6; Granadillas, 7/- case; Southern Valencia Oranges 7/- to 8/6 case; Joffa, 7/- to 8/-; Mandarins, best 6/- to 8/-, small 3/- to 5/- case. N.S.W. Navel Oranges 8/- to 10/-; Lemons, 7/- to 8/6 case; Tas. Apples, Demos., 9/- to 12/- case; S.T.P., 6/- to 8/6; S.P.M., 6/- to 10/-; Croftons, 8/- to 11/-; F.C., green 10/- to 11/-, yellow 5/- to 8/- case; Tas. Pears, W.N., 8/6 to 12/- case; Vic. Pears, W.N., 9/- to 12/-; W.G., 9/- to 12/-; Jos., 8/- to 12/-; B.P., 7/- to 9/- case.

TASMANIA.

Hobart (26/9/31).—N.Y.P., 4/- to 6/6; Demo., 3/- to 5/6; S.T.P., 2/6 to 5/-; S.P.M., 2/6 to 4/6; C.P.M., 4/- to 5/-; F.C., 3/- to 4/-; Del., 5/- to 7/6; small, spotty and inferior Apples, 1/- to 2/6; W.N. Pears, 6/6 case.

NEW ZEALAND.

Dunedin (17/9/31).—Messrs. Reilley's Central Produce Mart, reports prices as follows:—Apples, Jons., choice 6/- to 7/-, small 3/- to 4/6, other varieties 4/- to 6/-; Sturmers, choice 6/- to 8/-, small 3/- to 4/-, cookers 5/- to 6/6; Delicious, 6/- to 10/-, small 4/- to 5/-. Pears, W. Coles, half cases 2/6 to 5/-; W. Nelis, half cases 3/- to 6/-. Australian Navels 10/- to 14/-, according to size; American Grapefruit, 33/6; Poormans, 6/- to 8/-; Californian Grapes, 27/6, in kegs; Australian Lemons, 14/- to 16/-; Passions, Australian, 15/- to 18/-; Mandarins, 7/- to 10/-; Pines, 15/- to 18/-; Bananas, choice ripe Samoans, 20/- to 22/-.

IMPLEMENTS, GRADERS, TOBACCO PLANTER.

Display by D. Harvey at Royal Show.

In the display of Mr. D. Harvey (implement maker, Box Hill, Vic.), the three special features were cultivating implements, fruit graders and tobacco planter. Orchard implements for various soil cultivation practices were noted with interest.

The Harvey-Delaney Fruit Grader has several features which have been patented. The sizing of Apples and Oranges was demonstrated. In particular it was noted that as the Apples were brought up the elevator, they were automatically turned, if lying flat, and rolled along gently on their circumference, thus rolling gently into their correct bins. Apples being sized or graded according to their circumference.

The grading board slopes away from the conveyor belt at an angle of about 80 deg. Also this grading board itself is at an angle as regards the conveyor belt—these being factors in accurate and gentle sizing of the fruit. Discussing citrus graders, it was mentioned that the complete plant recently installed at Renmark, S.A., for washing, cleaning and sorting Oranges, was the largest of its kind in Australia

The Harvey Five in One Tobacco Planter is ingenious. It acts as a manure distributor, cultivator, and hiller, also planter. One man sits on the elevated seat to drive along the rows; two seats are provided at the back on which men sit to plant the tobacco seedlings as the outfit moves along. The men plant seedlings alternately: there is a regulated discharge of water to "set" the seedlings.

Mr. Harvey's stand was attended by growers from various parts of Victoria, also the other States.

SEAWEED AS A MANURE.

Seaweed contains about as much nitrogen as farmyard manure, but as it is present as slow-acting organic nitrogen, it is scarcely so valuable as average dung in which a certain proportion is present in the active available form of soluble ammonia compounds. The seaweed decays rapidly in the soil, however, and some of its nitrogen soon becomes available. It is most beneficial on light land where green manuring is known to give good results. The amount of phosphoric acid in seaweed is less than half that of dung, hence it is desirable to supplement it with a phosphatic manure, such as superphosphate or basic slag. On the other hand, seaweed is richer in potash. Seaweed used as above would undoubtedly prove very beneficial to Roses, and could be applied either on the surface or dug into the soil during the autumn or winter months.—("Gardening Illustrated," Eng.)

BANANA GROWING IN NEW SOUTH WALES.

A RECENT ESTIMATE shows that 2,730 acres of Bananas were planted out this season, making the acreage for the State nearly 7,000 acres. The possibilities of overplanting are being discussed, and growers have been advised by Mr. C. G. Savage, Director of Fruit Culture in New South Wales, to exercise caution in the planting out of new areas.

"Black Leaf 40" Death to Aphis (Plant Lice) and Other Insects

Aphis and other insects are common enemies of the orchardist and gardener. Protect your trees, vines and plants with "Black Leaf 40."

"Black Leaf 40" has the endorsement of Agricultural Colleges, Experiment stations and orchardists. It is the World's leading aphis specific. It also kills the young larvae of many chewing insects when sprayed upon them so as to wet their bodies.

Kills By Contact and By Fumes

"Black Leaf 40" has a dual action. It kills plant insects both by fumes and by contact. This double-killing action makes "Black Leaf 40" unusually effective in insect control.

Paint Roosts . . . Kill Poultry Lice

Poultrymen find that if they paint the roosts lightly with "Black Leaf 40" the lice on the birds are killed. The heat from the birds' bodies releases fumes which destroy lice, as the flock roosts on perches.

Genuine "Black Leaf 40"

"Black Leaf 40" is registered by us in Australia and New Zealand as a Trade-Mark and Brand. Users are familiar with the red labelled packages and the black leaf design prominently displayed thereon. Beware of imitations. Insist upon genuine "Black Leaf 40," made only by Tobacco By-Products & Chemical Corporation.

In the Orchard and Garden

"Black Leaf 40" is recommended for killing wooly aphis, apple aphis, peach aphis, aphis on roses, other flowers and vegetables, mussel scale (young), Harlequin fruit bug, holy or cross bug, oleander scale (young), San Jose scale (young), red scale (young), red mites (Summer), rutherglen bug, pear and cherry slug, thrip, fine scale (young), pea mite.

In the Poultry Yard

Paint the roosts lightly with "Black Leaf 40" just before the birds go to roost. Body-lice will be destroyed while the flock roosts. To help prevent mites from attacking fowls, tie or tack a piece of heavy cloth around ends of roosts and roost supports and saturate with "Black Leaf 40;" spray inside of house with "Black Leaf 40," three tablespoonsful to a gallon of water to which soap has been added.

Distributed in Australia by Neptune Oil Company, Melbourne, and by Producers' Cooperative Distributing Society, Sidney

MANUFACTURED BY
Tobacco By-Products & Chemical Corp.
(Incorporated)
LOUISVILLE, KENTUCKY, U.S.A.

"Black Leaf 40"
NICOTINE SULPHATE
POISON
Active Ingredient, Nicotine 40%
Inert Ingredients, 60%
TOBACCO BY-PRODUCTS & CHEMICAL CORP., INCORPORATED
Louisville, Ky.
MAKES 6 GALLONS OF SPRAY

VALLO

GENUINE NICOTINE SULPHATE

(Guaranteed 40%)

MADE IN AUSTRALIA

WHY GROWERS FIND THE USE OF "VALLO" PROFITABLE

(1) It is one of the oldest and strongest poison sprays known.
(2) No spray is more efficacious than "Vallo" Nicotine Sulphate for the control of aphis and similar pests.
(3) It is remarkably economical.
(4) Its two-fold action rapidly kills all insect pests—it destroys by contact and fumes.
(5) All State Departments of Agriculture recommend its use.

PRICES ARE COMPETITIVE

Tins:	10 lb.	5 lb.	2 lb.	1 lb.	½ lb.
	53/-	29/6	16/-	10/-	6/- per tin

F.O.R. Main Australian Ports, plus Sales Tax

Manufacturers . . .

VICTOR LEGGO & FARMERS LTD

Agents all States

218-222 QUEEN STREET, MELBOURNE

The Vegetable Garden.

OWING to the cold, wet weather experienced last month, we find that very little sowing has taken place in the vegetable garden, so we must now concentrate on getting in large supplies of the vegetables and salads, so welcome in summer. The soil should have been well prepared long before this, so it is only necessary to go over it with the garden fork or cultivator and bring it to the necessary tilth suitable for seed sowing.

First as regards French Beans, the Canadian Wonder type and the Waxpods require similar treatment. Sow the seeds in rows 18 inches apart, and place the Beans 2 inches deep and 6 inches apart, and rake over the surface and leave level and tidy, and as soon as the shoots appear go over the ground with the Dutch hoe and loosen the surface—in fact, this applies to all seeds.

Carrots are always in demand, and a good sowing of Shorthorn should be made: place them in rows 12 inches apart and sow the seed ¾ inch deep, and thinly; this saves a lot of time later when thinning out has to be done.

Red Beet should be planted largely, as it is always in demand for salads, etc: this should be sown in rows 12 inches apart and 1 inch deep, and thinly: the variety called Crimson Globe is best suited for the home garden.

Onions are useful in the young stage for salads, and the remainder can be allowed to develop in the rows where they grow into a useful size for the kitchen, and the smaller ones can be used for pickling; for salads any variety will do if grown only for this purpose, but the Silver Skins are those chiefly used. The variety Brown Globe is a good all-round sort, and should be sown on firm ground in rows 12 inches apart and one inch deep, sown thinly.

Lettuces are always appreciated, and when well grown are superior to those bought from the shops. Lettuces require a good rich soil and an abundance of water, and grown without a check. The best method is to sow the seed and grow on without disturbing the plants.

VICTORIAN FRUIT MARKETING ASSOCIATION.

Remarkable Progress.

THE annual meeting of the Victorian Fruit Marketing Association will be held at the C.T.A. Board Room, Melbourne, on October 2.

The annual report sets out the activities of the year, some of the direct savings to the growers being as follows:—Duty on base oils, £5,000; freights to New Zealand, £1,000; overseas freights, £116,000; quarantine charges on timber, £500; primage on fruit wrapping paper, £3,500. In addition, there were many indirect benefits, including better handling and stowage; hail insurance; the Research Committee issued a valuable pamphlet on cultural matters: a Refrigeration and Transport Committee has been formed to enquire methodically into export details.

* * * * *

The Victorian Fruit Marketing Association has showed much appreciated activity on all matters affecting the welfare of the industry, and now commands the respect and confidence of growers, traders and Government departments.

* * * * *

The good already accomplished is indicative of what is further possible. The V.F.M.A. has proved to be the type of organisation needed to stabilise and improve the industry.

Help Your Fowls To Lay More EGGS

1/- packet of Karswood supplies 20 hens for 16 days.

TRADE secrets are often jealously guarded, but Mrs. Walker, in her letter, which we publish below, does not bother about guarding hers. In fact, when she tells us that we can use her letter as we please, she does so in the hope that others will benefit by her experience. Mrs. Walker obtained 382 eggs from 10 hens during June and July, which, as she says, are two of the coldest months in the year. This means that she obtained slightly more than six eggs a day, yet two of the birds were nearly three years old, and eight of them were just six months old! In the warm weather of September, she obtained between 8 and 10 a day—practically 100 per cent. production.

Her secret is a simple one—"I never leave Karswood out of their mash winter and summer." Is it any wonder she talks about our "excellent spice"? Read her letter yourself.

"Began Laying Under 6 Months"

Dear Sir,

I have ten hens, two Leghorns and eight Black Orpingtons. The Orpingtons were not six months old when they began laying this year. The Leghorns are nearly three years old, and from June 1st to July 31st I had 382 eggs, and I think those are two of the coldest months of the year. They have only a small run, but I never leave Karswood Spice out of their mash, winter or summer. This is the secret of my success, and I think the results are very favourable. At the present I am getting 8 and 10 eggs per day owing to your excellent spice. You are quite at liberty to use this letter as you please.

Yours Sincerely,
(Sgd.) Mrs. W. WALKER, Moorooka,
19/9/29 Brisbane, Queensland.

NOTE THE ECONOMY.

1/- Packet supplies 20 hens for 16 days.
2/- Packet supplies 20 hens for 32 days.
13/- (7lb.) tin supplies 140 hens for 32 days.

SUPPLIES:

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½lb. packet, 1/-; 1lb. packet, 2/-; 7lb. tin, 13/-; 14lb. tin, 25/-; 28lb. tin, 48/-.

KARSWOOD
POULTRY SPICE
INCREASES EGG-PRODUCTION WITHOUT FORCING

Poultry Notes

Turkey-Raising.

The raising of turkeys, when systematically carried out, can be made a profitable sideline to other farming operations such as wheatgrowing and grazing. Under these conditions, where the birds have unlimited range, they can obtain a good deal of their food requirements in the form of wheat and of seeds of weeds, such as saffron thistle, etc., which they readily eat, and in doing so should prove an asset to the farm, apart from the income derived from marketing the birds.

To breed turkeys successfully, plenty of range and proper conditions and management are essential, writes the N.S.W. Poultry Expert of the Department of Agriculture. Generally speaking, turkeys do better in the dry country districts than in the coastal area, but where plenty of land is available they can be reared in the outlying coastal districts with more or less success.

The breeding of turkeys on intensive lines and in small runs as in poultry farming is not practicable, because the birds do not thrive well in close confinement, and such conditions favour diseases, especially entero-hepatitis (blackhead), which has been one of the most serious drawbacks to the raising of turkeys. When the birds are run on extensive range, measures can be adopted to minimise, if not altogether overcome, this disease.

In Australia practically all the turkeys raised are the American Bronze, and for commercial purposes this is the most satisfactory breed. In Europe and America also it predominates, but other breeds, such as the Bourbon Red, White Holland, Black and Narragansett, are kept to a certain extent.

The Bronze is the hardiest when allowed free range, and is preferred on account of being a larger bird than the other breeds. In weight adult Bronze birds range from 5 to 8 lb. heavier than the other breeds mentioned, and gobblers raising 2 years old should weigh from 30 to 35 lb., and hens of the same age about 14 lb. less.

Mash for Chickens and Pullets.

Questions:

"Amateur" (Balwyn) writes:—

Could you please let me have a good reliable dry mash for chickens at present 4 weeks old? Also for pullets, as I want to keep on with the dry mash.

Answers:

A good mixture for chickens which can be fed either as dry or wet mash and can be given from the time they are two days old until they reach maturity can be made up as follows:—80 lb. maize meal, 40 lb. ground wheat, 20 lb. ground hulled oats, 20 lb. bran, 6 lb. charcoal, 5 lb.

bone meal, 20 lb. dried buttermilk, 5 lb. fine shellgrit, 1 lb. salt, 1 lb. superphosphate.

A simple dry mash for laying pullets might be made up as follows:—Bran ½ part, Lupol (if good sample is obtainable) ½ part, pollard 2 parts, meat meal 5 per cent. of above mixture, charcoal dust 5 per cent. of above, salt 1-20th of above.

Question:

3. Would a White Leghorn hen crossed with a Black Orpington cockerel produce a black or white chicken? By this I mean the color when the bird is up to five months old.

Answer:

A White Leghorn-Black Orpington cross as suggested would result in white predominating in the chickens, and at the age of five months most of them would be white with some black feathers.

At the Melbourne Royal Show.
W. Tedstone's Winning Rhode Island White Hen.

DO YOU RAISE DUCKS?

Given a good strain ducks are prolific layers, and will lay as many eggs as fowls.

Ducks' eggs are always in good demand, both for table and hatching purposes.

If you can obtain plenty of fertile eggs during the winter and spring months, you will reap a nice harvest from those who hatch ducklings.

Ducks are apt to drop their eggs in the water, so do not allow them out until the majority have laid.

The eggs are carried very low, so that the duck-keeper will know which ducks are on the point of laying.

The day-old duckling trade is a profitable sideline, and can be practised by anyone with a good incubator and a flock of breeding ducks.

"LIGHTNING" FRUIT GRADER.

The exhibit of the "Lightning" Fruit Grader Co. at the Melbourne Royal Show, attracted favorable attention. In addition to well constructed graders in several sizes, there were nailing down presses and other equipment on view. A new feature on the fruit grader is that the rollers on the elevators are scalloped, thus preventing any fruit from rubbing against the sides of the elevator. Further, an attachment has been provided by which eleven different speeds are possible. By running the elevator slowly it is possible for the majority of the culls to be removed before going on to the sizing bins.

A special machine has been constructed for Pear grading. As the Pears are brought up the elevator, an ingenious device turns the stem end outward, making it impossible to entangle or damage the Pear. The Pears are then conveyed, motionless, to the bins, being sized accurately on the journey

The high quality workmanship of the "Lightning" graders, was favorably commented on by visitors.

COLOMBIE CUP.

In accordance with previous practice, there will be a competition among Victorian growers for the Colombie Cup: points are awarded by Mr. J. M. Ward and officers of the Agricultural Department, on all parcels of Apples exported.

Points are awarded for external appearance of case, internal presentation of fruit, wrapping, grading, quality and freedom from blemish. Full particulars are obtainable from Mr. H. G. Colombie, Temple Court, Melbourne.

NEW ZEALAND.

Citrus Planting.

There is a large amount of citrus planting going on in the Auckland provincial district in both Oranges, Grape Fruit, and Lemons during the last few years many thousands of Orange and Lemon trees have been imported in addition to those which are being grown here.

Lemon Marketing.

Lemon grading, curing, and marketing, has progressed in the north of New Zealand at a fast rate during recent years, two curing and grading factories are at work, and the output is sold on the basis of monthly pools, one is at Tauranga and the other is at Auckland. In addition, several are curing and packing privately. The result has been a wonderful improvement in the pack and the marketing. The N.Z. Grape Fruit has also been placed on the market in larger quantities and with better results.

Advertising.

Newspaper advertising has been resorted to with good effect, while the citrus stand and competitions at the recent Auckland Winter Exhibition were of a very high order and attracted much attention.

General Fruit Tree Planting.

This has been limited to a few varieties of Apples, notably: Granny Smith, Statesman, Cox's and one or two other sorts. With a few Peaches, Nectarines, and some Apricots. Should the promise of fair prices for the export Apples continue, there is every reason to expect a considerable increase in the number of new plantings.

Australian Dried Fruits.

At the annual Victorian State Conference of the Australian Dried Fruits' Association held at Mildura on September 15, Mr. A. L. Johnstone presided. Delegates attended from Mildura, Murray Valley, Coomealla and Curlwaa districts. It was decided to ask the Federal Council to fix a maximum price for containers in which Muscatels are packed, also that the Federal Council be urged to refund to councils and groups 6d. per ton of levy collections. Other resolutions favored an insurance policy to cover fruit in transit from block to packing shed, and elimination of unnecessary inspections after the fruit has been packed.

Regarding the exchange premium, it was pointed out that the Board of Management insisted that every penny of exchange should go to the growers. Mr. D. Farmer, organiser of the Australian Dried Fruits Association, reports that the Clare branch of the A.D.F.A. has been reconstituted. This is a separate entity from the Clare Dried Fruits Association Packing Shed.

Mr. L. B. Marchant reports having visited Manunka, Canberra and Grenfell, visiting schools and giving public addresses, attending to displays in grocers' windows.

Mr. J. L. Gibbs is carrying on in New South Wales the work of organising sales initiated by Mr. Marchant, attending to picture screenings, window dressing, visiting bakers, grocers, addressing adults and children.

Mr. A. E. Hammet, organiser for the Australian Dried Fruits Association, visited Camperdown, Terang and Warrnambool (Victoria), calling on grocers, bakers and generally pushing the sale of dried fruits.

Mr. E. Mathews visited towns in Northern New South Wales including Muswellbrook, Tamworth, Armidale and Tenterfield, in the dried fruits van, being successful in publicity efforts to increase the sale of dried fruits.

Frost at Mildura.—In mid-September, severe frost damaged certain vineyards in a low-lying part of the Mildura settlement. Every Currant shoot was taken, and in hard pruned vineyards in which the buds had already shot, the loss will be severe. One man estimates that at least half of his Currant crop is gone. The anticipated loss of Sultanas is not great.

Berri.—At the recent annual meeting of the Berri branch of the A.D.F.A., the retiring members of the Executive were re-elected:—Messrs. A. P. Wishart, R. Curren, E. J. R. Johnson, E. J. Moritz, and F. McGlasson. Mr. S. C. Kay was re-elected auditor.

Barmera.—The annual meeting of the Barmera branch fo the A.D.F.A. was held on September 3. To fill three vacancies on the Executive, Messrs. Porter, Symes and Williams were elected.

The annual State Conference of the South Australian branches of the A.D.F.A. was held at Barmera on September 23.—"Dried Fruit News."

DRIED FRUITS SALES IN AUSTRALIA.

The following were the A.D.F.A. sales of dried fruits in the Commonwealth to June 30:—

	Tons.
Currants	981
Sultanas	1,677
Lexias	534
Total	3,192

NEW COMMONWEALTH PRICES.

A.D.F.A. Commonwealth prices for dried fruits have been advanced as follows:—

"Sultanas: three's, two's, one's, and plain, ½d.; Currants and Apricots: all grades, ½d.; Lexias: seedless, ½d."

This makes the prices as follows for 10-ton lots:—

Sultanas.—5-cr., 9½d.; 4-cr., 8½d.; 3-cr., 8d.; 2-cr., 7½d.; 1-cr., 7d.; plain, 6½d.

Currants.—4-cr., 8d.; 3-cr., 7d.; 2-cr., 6½d.; 1-cr., 6d.; m.f., 5½d.

Lexias and Walthams.—5-cr., 6½d.; 4-cr., 5½d.; seedless, 5¼d.; 3-cr., 4½d.; 2-cr., 4¼d.

Apricots.—4-cr., 9¾d.; 3-cr., 8¾d.; 2-cr., 7¾d.; 1-cr., 6½d.; slabs, 6½d.; in sacks ungraded, 7d.

Peaches and Nectarines.—4-cr., 8½d.; 3-cr., 7¼d.; 2-cr., 6¼d.; 1-cr., 5d.; slabs, 5d.; in sacks, 5½d.

Pears.—4-cr., 9¼d.; 3-cr., 8¼d.; 2-cr., 7¼d.

VINE FRUITS.

Good Yields Indicated.

The bud burst at Mildura and Red Cliffs promises a good yield: Sultana and Currant crops should be heavier than last season, if there be no severe losses through frost or black spot. The frost danger is practically over.

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MELBOURNE.

"Fruit World Annual"
Comprehensive review of Australian and New Zealand fruit industry.
"The Fruit World," Box 1944 G.P.O., Melbourne.

Congratulations to Mr. H. N. Wicks, fruitgrower and nurseryman, of Balhannah, S.A., who has been elected chairman of the South Australian Advisory Board of Agriculture.

Mr. Wicks was an appreciated visitor at the recent conference of the Australian Apple and Pear Council, and made a helpful contribution to the discussion on the biennial cropping of Apple trees.

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Fertilisation of Soils for Tobacco.

Much experimental work has been done in America. The more recent of this work has demonstrated conclusively that the application of either single or compound artificial fertilisers suggested by knowledge of the chemical and physical characters of the soil, especially as regards deficiency factors, are not necessarily effective. Similarly failure frequently results from fertilisation practice based on a knowledge of the excesses or deficiencies of leaf structure constituents. Dr. Garner instanced ammonium phopsphatic compound in calculated proportions with nitrate of potassium as a theoretically perfect fertiliser in certain cases which in practice utterly fails to bring about the expected result. More important is the research work which has indicated that the effectiveness of any particular constituent of a fertiliser is variable according to its source, and the combination in which it exists. This is found to be particularly the case as regards nitrogen, calcium and magnesium elements.

The renewal of the Sugar Agreement has not been favorably accepted by the general public in most of the Australian States. A glance at the newspapers reveals that meetings of protest are being held in many places. There is a growing feeling that the public is not getting a square deal. Judging by reports the feeling is particularly strong in Western Australia, Tasmania, South Australia and Victoria.

Mr. Blobbs: "I've got to get rid of my chauffeur; he's nearly killed me four times."

Mrs. B.: "Oh, give him another chance."

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VICTORIAN CITRUS PRODUCTION.

Large Total Last Season.

Victoria's citrus production during the 1930-31 season totalled 516,133 bushels of Oranges and 134,479 bushels of Lemons and Limes, compared with 383,975 bushels of Oranges and 115,212 bushels of Lemons and Limes the previous season, according to figures made available by the Government Statist (Mr. A. M. Laughton). The total crop this year may reach 500,000 bushels.

LATE MR. W. H. PIERCE.

The will of Mr. William Harold Pierce, fruit merchant, of Gordon, N.S.W., who died on April 24 at the age of 42 years, has been sworn for probate of £20,082. Testator devised and bequeathed his estate for the benefit of his widow and children, and appointed his widow and his brother (Mr. Stephen Pierce) to be executrix and executor of his will.

"Give fools their gold, and knaves their power;
Let fortune's bubbles rise and fall;
Who sows a field, or trains a flower,
Or plants a tree, is more than all."
—J. G. Whittier.

M. ASVARISCH

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Copenhagen - Denmark

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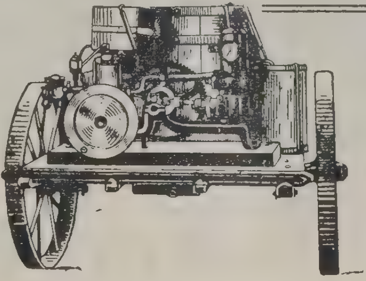

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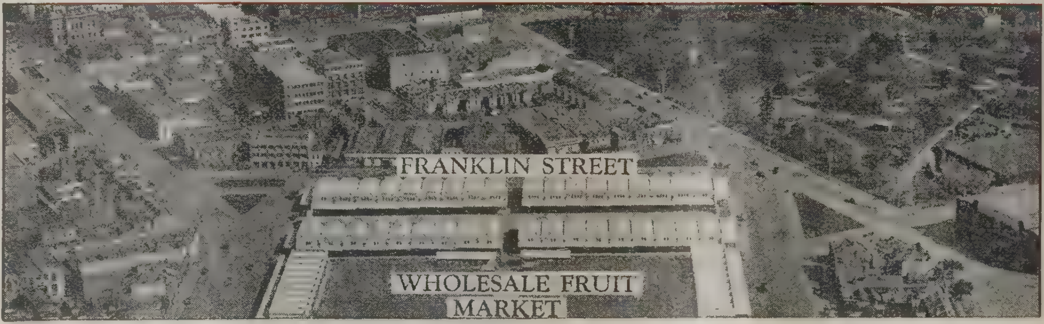

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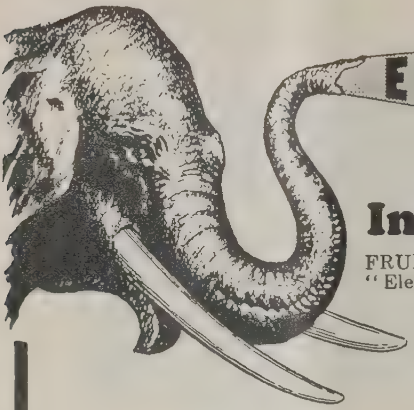

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In view of the extremely wet season that has been experienced and the possibilities of Black Spot, growers will be well advised to take every precaution by spraying regularly with:—

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TOMATOES FOR SAUCE.

Big Contract in N.S.W.

To secure steady supplies of Tomatoes of the right variety for making sauce, nearly half a million seedlings of the Marglobe and San Jose varieties have been supplied to farmers in the Hawkesbury district to grow the Tomatoes under contract for a Sydney firm.

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PATERSON'S

CLENSEL

Insecticide and Fungicide

BRITISH PRODUCT

Used throughout the World for 30 Years

Read the following sound advice from the
MANUFACTURERS OF CLENSEL

There is another very important point which we cannot emphasise too strongly, and this refers very specially to trees and bushes. The great secret is not to wait until the pests make their appearance, but to **spray the plants, trees or bushes with a dilute solution of Concentrated Clensel Insecticide and water;** anything from a 1 per cent. to a 6 per cent. solution while the pests are invisible and in the larvae stage, and this spraying process should then be repeated at intervals of round about two to three weeks throughout the season.

For years many growers were averse to adopting this procedure, but many have told us that the actual cost of this is many times wiped out by the increased production which they receive, coupled with the fact that their Gardens and Orchards are in perfect condition, which represents thoroughly sound capital.

"Clensel" is non-poisonous, non-inflammable, destroys insect and fungus pests—also a tonic for all trees and plants.

AUSTRALIAN DISTRIBUTOR—Bruce Anderson, 54A Hoddle St., Abbotsford, Victoria.
WEST AUSTRALIA—Messrs. Bernard Shaw & Co., 53 St. George's Terrace, Perth.
SOUTH AUSTRALIA—Messrs. T. Paltridge & Sons Ltd., Mount Barker, South Australia.
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NEW SOUTH WALES.—Distributor Wanted.
QUEENSLAND—The Fertilizers Distributors Ltd., Roma Street, Brisbane.

Excellent Reports being received from all over Australia

THE BRITISH ELECTIONS.

WITH THE RETURN of the National Government in Great Britain the policy of Empire development may be expected to be accelerated. This policy was plainly placed before the electors by Mr. Ramsay MacDonald, Mr. Stanley Baldwin, Sir Herbert Samuels, and other leaders. The National party victory was so sweeping that it is evident the nation stands right behind the stout-hearted and far-seeing men who took their courage in both hands, telling the people to prepare for sacrifices, but that the ultimate result would be to the benefit of all. The renewed spirit of confidence is most pleasing. The eyes of the world were focussed on these British elections, and the world has acclaimed the results.

Increased reciprocal trade with Australia should follow, in accordance with the policy placed before the electors. Australia will not ask for favors, but for facilities for increased mutual service—our purchasing of British goods and supplying the Old Country with increased quantities of our products.

Great Britain is our best market. The new Government favors Empire preference to develop the Empire. This section of the Empire rejoices at the victory of those who stand for sound national finance and Empire development. Australia has a big job to develop this island continent. That result will be best achieved in close co-operation with Great Britain.

* * * *

A word of appreciation is due to Mr. Ramsay MacDonald for his farseeing vision and personal courage.

CANNED FRUITS.

All Stocks Cleared Overseas.

The canned fruit position is viewed hopefully in the light of recent events. That all stocks of Australian canned Apricots, Peaches and Pears in Great Britain and afloat for that destination had been cleared into first hands. Further quantities had been sold for forward shipment. The sales effected this year to September 30, totalled nearly 900,000 cases, more than half being canned Peaches. This is the largest quantity Australia has ever disposed of on the British market in any one year.

The total quantity of canned Apricots, Peaches and Pears exported to all markets to September 30 were (in dozens), 1,033,726 (30 oz. tins), 199,888 (21 oz. tins), 193,559 (16 oz. tins).

The indications are that there will be little or no stocks of canned Apricots, Peaches or Pears carried forward by processors into the 1932 canning season.

STRAWBERRIES FOR JAM.

Good Quality Fruit Needed.

The necessity of good quality of Strawberries and other fruits for jam and preserving is dealt with in a letter from a leading jam manufacturer. A paragraph was republished in our last issue from the weekly notes of the N.S.W. Department of Agriculture, giving hints as to the disposal of the poorer grades for jam manufacture.

We are asked to point out that the trade takes a pride in producing jam of good quality, and it is quite a mistake to suggest inferior products can be disposed of for jam **manufacture.**

AUSTRALIAN APPLE CROPS.

On present indications, it would appear that the Apple crop prospects are as follows:—Tasmania and Western Australia, heavy; South Australia, medium to heavy; Victoria, medium to light; N.S.W., light.

WESTERN AUSTRALIA.

Mount Barker.—Mr. A. T. Booth, Secretary Mount Barker Fruitgrowers' Co-operative Society Ltd., advises under date October 13, as follows:—The present prospects of our crop are as follows:—

Apricots, light; Peaches, medium; Plums, good; Apples, heavy; Pears, heavy.

The trees are either now in full blossom or fruit setting, and hail is the only thing that can prevent us having a good crop.

The main varieties in this district are:—Jonathans, Dunns, Cleos., Granny Smith and Yates, followed by smaller quantities of Rokewoods, Rome Beauty, Statesman, Democrat, Pioneer, Doherty, etc.

VICTORIA.

Apple and Pear Crop Prospects.

That there will be a reduced crop of Apples and Pears in Victoria is now certain. It is impossible at the time of writing to give a reliable forecast. In the districts around Melbourne, Doncaster, Ringwood, Croydon, etc., much damage has been caused by thrips as well as by the wet winter. Pears, Peaches and Apples will be light to very light. Among the Apples, Jonathan and Yates show a sprinkling of fruit; London Pippins are wiped out in some orchards, while in others there is a fair top showing. Some growers are looking forward to having a crop of Romes.

On the Mornington Peninsula the crops are fair. Jonathan and Yates look like having a medium crop. Here again, some Apricots and Peach trees died because of the wet winter.

Harcourt suffered from a severe visitation of thrips, also a frost in the lower areas. Among the orchards on higher lands there appears to be a fair crop of Jonathan, Cleo., Rymer, Schroeder, Sturmer, and Stone Pippin. Dunns are doubtful, but the position is not hopeless.

In the Gippsland district crops are variable. Orchards surrounded by bush timber got the thrip badly. Other orchards are showing a fair crop of Jonathan and Yates.

Further information will be published next month.

* * * * *

There will be a light crop of Peaches in the Goulburn Valley.

NEW SOUTH WALES.

Mr. C. G. Savage, Director of Fruit Culture, Sydney, advises under date October 27: Owing to a severe infestation of thrip, together with dry and cold weather conditions during the spring, the setting of the fruit crops on the whole has not been satisfactory.

In general terms, the prospects for the whole of the State might be summed up as follows:—Peaches, very light; Apricots, very fair; Plums and Prunes, light; Apples and Pears, patchy; Citrus, a little early to give any general indication, but anticipate that the crop will be much lighter than last season.

Australian Dried Fruits Association.

Successful Annual Conference of Federal Council.

Export Position Satisfactory.

THE Annual Conference of Federal Council of Australian Dried Fruits Association was held at Melbourne in mid-October. Delegates were present from all producing States, excepting Western Australia. Mr. A. L. Johnstone was elected Chairman of the Conference.

Feeling reference was made to the sudden death of Mr. P. G. Stewart, M.P., always a champion of the dried fruit industry. Delegates stood in silence to carry a resolution of sympathy with the widow and relatives.

Conference passed a resolution expressing sympathy with Mr. H. S. Taylor, of Renmark, in his illness, and expressing a hope for his early recovery.

Other motions carried were:—Extending sympathy to growers in the Clare and other districts of South Australia, who have suffered severe losses by frost; recommending that the number of South Australian delegates to Federal Council be increased from six to seven; that account sales for Muscatels sold in cartons shall show the actual cost of the cartons.

Conference recorded its appreciation of the magnificent work performed by the Empire Marketing Board in assisting producers, and expressed the earnest hope that the Empire Marketing Board would continue as a means of fully developing Empire trade.

Appreciation was also expressed to the A.D.F.A. Board for efforts to secure a reduction in merchants' commission, and urging that the efforts be continued.

The annual report of the board of management referred with satisfaction to the improvement in the position of the industry since last year, due in part to the continuation of British and Canadian preference, the advance of the exchange rate to 30 per cent., the quick selling of the 1931 crop, and the clearing of the 1930 carry-over at enhanced values and an approximate reduction of production costs by 20 per cent. The organisation in Australia had been extended with very beneficial results. The report recommended an increase in the tonnage levy to 2/6 as formerly. In regard to tree fruits, the position had been improved through negotiations with sellers outside of the organisation, and although benefits in prices had not yet been received, the statistical position was much better. Close cooperation between the board of management and the control boards was acknowledged. The report was adopted.

The report of the organiser, Mr. D. Farmer, on his work in South Australia, was adopted and approval expressed of the good results obtained. It was resolved that the organiser's services be continued in South Australia, and that a temporary organiser be appointed to carry on work in N.S.W. The organiser's report on the publicity vans was also approved.

A motion that all Sultanas for sale in the Commonwealth be standardised into three grades was negatived after a long discussion.

At the second day's session, Messrs. Howie, Winterbottom and Lawrence were re-elected without opposition to the board of management.

Mr. W. C. F. Thomas, Chairman of Commonwealth Dried Fruits Control Board, and Mr. A. F. Bell addressed Conference on work of Board, and Conference accorded them a hearty vote of thanks for their valuable services. Mr. Thomas was optimistic regarding the present position of the industry, but he urged growers and packers to continue their efforts to maintain the standard of the pack. Conference decided to send letters of appreciation to Messrs. Caro and Hyland for their fine work on the London Control Board.

The Secretary's report and balance-sheet were read and adopted, delegates expressing the opinion that they were very satisfactory.

The following resolutions were carried:—

"That 'Plain' and one-crown tree fruits be listed and included in all adjustments of the Association, but that the drying of this fruit should be discouraged."

"That color standard for Apricots be fixed for not less than three types; color samples to be fixed by a small representative committee at the beginning of the coming packing season."

"The Committee recommends that tree fruits comprising Peaches, Apricots, Nectarines, Pears and Prunes be brought under control."

"That it be a recommendation to the board of management that a statement be issued to all South Australian packers, showing the correct working of Rule 80 and the reason for its adoption, as it relates to pool pack payments."

After a long debate and a close vote, a proposed amendment of the regulations as follows was defeated:—

"That where selling organisations desire to render account sales to growers on a five per cent. deduction basis, the selling organisation shall apply to the local executive of the Association for endorsement of the proposal. The endorsed application shall then be submitted to the board of management, who may grant authority for adoption of the proposal and that this application be made annually."

In order to overcome the difficulty that this motion was intended to remove, the following motion was submitted and carried unanimously:—

"That where a packing shed is desirous of making the five per cent. deduction for stems, delegates concerned make every effort to find an alternative scheme. Failing the adoption of such scheme, application be made through the local executive to the board of management, which shall have power to grant same for permission to issue account sales on packed weight.

"That the board of management take up with packers the question of insuring fruit in transit from the block to the shed."

"That the board of management be requested to take immediate steps to secure a reduction in the insurance premiums on dried fruits."

Address by Mr. Lyon.

Mr. A. V. Lyon, Scientist at the Merbein Research Farm, addressed the Conference on the subject of dried fruit pests and the present status of control over those pests in the Australian pack. The speaker showed the satisfactory progress that had been made, and he indicated the further steps needed to ensure complete immunity. He also spoke on standard methods of drying Sultanas. Conference accorded Mr. Lyon a vote of thanks for his address and expressed its appreciation of his hard and capable research work.

The date for the next Federal Conference was fixed for the last week in November.

That in export markets agents shall charge a commission of not more than 5 per cent. on the f.o.b. realised value, exclusive of exchange, for fruit shipped to the

United Kingdom and controlled markets, which rate must include London representative's commission.

Distillery Fruit.

For distillery fruit, it was decided that for the over and under export adjustment the following only shall be taken into account:—

Sultanas, boxed fruit; Currants, boxed fruit and bucks; Lexias, for the time being, only boxed fruit.

Appreciation was expressed for the action of the Federal Government in securing extension of the Canadian Trade Treaty, believing that preferential trade within the Empire would solve many of our Empire economic problems.

Conference supported the proposal for extension of representation on the Victorian Dried Fruits Board, by dividing the voting area in Victoria into two districts, No. 1 district to comprise Mildura, Merbein and Red Cliffs, and No. 2 district the remainder of the State: the representation to be three growers for No. 1 district and one grower for No. 2 district.

The Commonwealth Dried Fruits Control Board and the London selling agency were congratulated on the very satisfactory work done on behalf of the industry.

The Council strongly urged growers in all States to support a genuine A.D.F.A. grower candidate in the forthcoming elections for State Boards.

A vote of thanks was carried to the press for its assistance.

THE DRIED FRUIT SITUATION.

The satisfactory clearances of Australian dried fruits in Great Britain this season must be a source of satisfaction to the growers, and all concerned in the industry.

Heartening as the situation is at the moment, there is no justification for any suggestion as to a boom in these products. The industry has been passing through a very lean period, hence the relief because of present-day improvements.

It must be remembered in the first place, that Australia had only about a half crop of Sultanas.

This crop was meeting with its usual steady demand on the British markets, until it became apparent that both California and Smyrna were going to be short this season. July was one of the hottest months California has known: there was a shortage of water, also there was a heavy infestation of the destructive leaf hoppers. Smyrna had a crop of about 24,000 tons instead of the usual 45,000 tons. Hence the bigger demand for the Australian product.

Also, there is the matter of exchange—30 per cent.—so heavily in favor of the Australian exporter. The Australian Dried Fruits Association is proud of the fact that the growers who are in this organisation are receiving the full value of the exchange.

* * * * *

The recent Conference of the Australian Dried Fruits Association, held at Melbourne in October, was quite successful. All the producing States except W.A. were represented, and much good work was done.

Woke Just in Time.

The telephone operator had been dozing during the church service. She awoke with a start just as the minister announced the hymn: "Number 537."

"Engaged," spoke up the young lady, forgetting herself for the moment.

CONTROL BOARD'S REPORT.

THE seventh annual report of the Commonwealth Dried Fruits Control Board emphasises the value of the preferences extended to Australian Dried Fruits in Great Britain and Canada.

In 1925 Currants imported into Great Britain from Australia amounted to 6,706 tons and in 1930 to 13,374 tons. Sultanas and Lexias in 1925 amounted to 17,605 tons, and in 1930 to 32,715 tons. Average prices of Currants and Sultanas realised in Great Britain in the last six years are as follow:—

	Currants.		Sultanas.	
	Tons.	Average Price.	Tons.	Average Price.
1925-26	8,097	£37 16 5	11,442	£64 11 9
1926-27	4,756	42 11 0	28,150	53 14 7
1927-28	586	55 12 6	11,100	35 3 10
1928-29	12,439	42 11 6	34,798	38 14 6
1929-30	13,066	35 0 9	26,993	42 2 0
1930-31*	5,172	39 17 0	3,049	55 14 6

*To date.

The importance of developing markets other than the United Kingdom is stressed. Sales to Canada had increased from 776 tons in 1925-6, to 7,435 tons in 1929-30.

The 1931 season's crop was under 50,000 tons, compared with 72,000 tons in the preceding season. In 1930 the surplus available for export was 56,732 tons, of which over 46,000 tons were sent to the United Kingdom, and nearly 7,500 to Canada.

The Board directs attention to the limited capacity of markets in the Near East for dried fruits.

The need for preferential treatment for Australian dried fruit exported to New Zealand is again mentioned.

The favorable exchange on exports has greatly benefited Australian producers—to the extent of about £300,000.

According to present indications there should be heavy yields of vine fruits this season.

AUSTRALIAN FRUIT IN CANADA.

Mr. W. Ranger's Investigations.

Mr. W. Ranger, Manager of the Committee of Direction of Fruit Marketing, Brisbane, who has just returned from a trip to Canada, is very optimistic regarding wider markets for Australian canned and fresh fruits in Canada. He also thinks it is possible to develop trade in the export of Grapes with Canada.

One result of the new trade treaty with Canada, Mr. Ranger thinks, may be to replace Canada's imports of Hawaiian canned Pineapples with Queensland Pineapples. Canada's trade in Pineapples with Hawaii has been between 150,000 and 175,000 cases a year, each case containing two dozen tins. As a result of his visit, Queensland will be able to dispose of her surplus of about 150,000 cases to Canada. More than 100,000 cases have been sent already. They are being shipped to Vancouver and Montreal and then sent to all parts of the Dominion.

MURRABIT WINS PRIZE.

After entering a protest at the recent Royal Agricultural Show, the Murrabit Packing Co. was awarded the prize in the export class.

At first this exhibit was disqualified, but on appeal the disqualification was removed, thus giving Murrabit the coveted prize.

STRAWBERRY CULTURE

Maintaining an Established Plantation

(By A. G. Strickland, M.Agr.Sc., Horticultural Research Officer.)

Working During the First Season.

Cultivation.

As soon as weeds germinate the horse-hoe should be used. Tillage to a depth of about 4 inches is desirable, provided that the implement does not come within 9 inches of the plants on either side. Between plants in rows hand-hoeing is necessary; this should be shallow, from 1 to 1½ inches being sufficient to prevent roots coming too near the surface. Care should be taken not to cut too many roots of the young plants, and this cleaning process should be repeated as often as the season demands. During the first summer after the crop is harvested frequent cultivation with the scarifier (small Planet Junior) should be carried out.

Runners.

After the plant is established, it sends out runners which produce new plants, and in the matted-row system several runners are allowed to form new plants during the first year. In the hill system, however, which is most common in Victoria, all runners are removed throughout the season as they retard the growth of the parent plant. Where it is desired to obtain new plants, a sufficient number of first-year plants should be set aside for this purpose. From these plants, flower stems should be removed as they appear, production of flowers and fruit at this stage tending to decrease the production of runners. As soon as the runner has taken root, and before it extends its stem for the production of further runners, detach it from the parent plant, and pot it in moist earth rich in vegetable mould. Pots should be kept in a cool, shady place, and watered regularly until planting time in autumn. The practice of allowing runners to attach to the parent plant until required for planting out, or of even detaching them and leaving them in their original position in the ground throughout the summer is not to be commended. The runner is weakened by subsequent runners extending from it, and by exposure to sun and drought. Plants produced early in the season are superior to those produced in late summer months, as the crowns of the latter are not sufficiently matured. The practice of removing spring flowers, to stimulate runner production, is advised where it is desired to obtain young plants for a fresh plot.

Mulching.

The practice of mulching is to be recommended, and many materials are satisfactory for the purpose, oat, wheat, or barley straw commonly being used. The material should be applied shortly after the setting of the earliest berries, and should cover the ground surface, including the area under the leaves of every plant. The quantity of straw required to mulch one acre is approximately 15 cwt. to 1 ton. Mulching prevents the splashing of berries with dirt, and the cost is justified by the higher proportion of clean berries harvested.

Irrigation.

Strawberries being comparatively shallow-rooted, the yield and quality of the crop in southern Victoria is often diminished to a greater or less extent by periods of drought previous to, or during the fruiting season. Under such conditions one or more irrigations will prevent loss which might occur, and in hot, dry weather may even be the means of saving the crop. In the north of Victoria the crop will, of course, require frequent irrigation, and a good practice is to water every two or three weeks during the ealy part of the season, and then at more frequent intervals during the hotter portion of the growing period. Water should be applied weekly in the summer, and in the autumn sufficient water should be applied at intervals to keep the plants growing up to the break in the weather. The method of applying water is similar to that used in Tomato culture, either by means of permanent ditches between rows (as in raised bed culture), or by means of furrows on one or both sides of the row, where level culture is practised. If the outlay is justified, the installation of an overhead sprinkling system simplifies the irrigation question, as this method of watering gives the grower complete control over soil moisture.

Strawberries Planted on Hill System, Red Hill, Vic.

During the picking season irrigation should follow picking. There is some danger in applying water too freely, as it may lead to the production of soft, poor quality fruit. The aim of the irrigator should be to give the plants sufficient moisture for their needs only, and not to attempt to force a large crop of soft fruit by over-irrigation.

Harvesting.

The number of pickings is controlled by the weather. Generally speaking, the fields should be picked over every other day, but if the weather is hot and the berries are ripening rapidly, it may be necessary to pick daily. The fruit will carry better if picked during the early part of the day, whilst it is still firm and cool.

The berries should be harvested when they are from three-quarters to totally red, and no variety should be picked with the tips still green. The fruit is not pulled or stripped from the plants, but pinched off by the stem, leaving about ½ inch of stem still attached. Each picker should be provided with a shallow wooden tray designed to hold four 16-18 oz. punnets, into which the fruit is placed. Subsequently the fruit may be graded according to size and quality, the usual grades being Special, No. 1, and No. 2.

For some trades the punnets are faced in order to make them more attractive; this is done by turning the berries on their sides so as to show as little of the hull as possible. It is important to remember, however, that the top layer must represent a fair sample of the contents of the punnet. For small round-berried varieties, facing by means of placing the fruit in rows, with the stem ends down, will be found to provide the most attractive pack.

Punnets are packed into crates, holding 24, 32, or 40 punnets, according to their size, a movable shelf separating each layer of boxes.

In order to comply with packing regulations punnets must be of the following dimensions (inside measurements):—Width at top, 4½ inches; width at bottom, 4 inches; depth, 2¾ inches.

Fruit should be handled as little as possible and kept out of the sun; for this reason picking trays holding more than four punnets are undesirable. Closest attention should be paid to packing and grading, and all soiled and under-sized fruit removed from the first grade. Medium to large berries of good color, and not over-ripe, bring higher prices than fruit of all sizes, especially if the latter is shrivelled or mushy.—**From Journal of Agriculture of Victoria.** **(To be Continued.)**

Fruitgrowers' Federation of New South Wales.

A meeting of the Board of the N.S.W. Fruitgrowers' Federation was held on October 9 at Sydney.

There were present: General J. Heane (in the chair), Messrs. H. G. Such (Griffith), F. D. Inman (Leeton), T. A. Tester (Young), A. U. Tonking (Orange), H. G. Edgell (Bathurst), T. S. McDonald (Gosford), A. S. Brown (Ourimbah), P. C. Best (Dural), F. B. Mackenzie (Kurrajong), W. W. Challis (Kentucky), A. J. Taylor (Singleton), L. T. Pearce (Market Representative), E. E. Herrod (Secretary). Apologies were received from Mr. A. E. Herring (Batlow) and Mr. C. G. Savage (Director of Fruit Culture).

Market Representative.—The President reported that Mr. L. T. Pearce had been appointed and assumed duties on August 31. Negotiations were proceeding for securing a suitable office.

Sale of Oranges in Bags.—The Secretary reported that the Department of Agriculture had received a ruling from the Crown Solicitor which in effect means that there is no power under the Act to prohibit marketing in bags, although if marketed in bags the fruit is still to comply to the regulations in regard to grading and the bags marked in accordance with the grading regulations.

Railway Department.—With reference to the request that the present accepted average of 42 bushel cases to the ton be increased to 46, the Secretary reported having received a refusal from the Railways Commissioners.

It was decided to ask the Railways Department to re-institute a provision that was allowed last year under which used Canadian cases could be sent free by rail up to the number returned full the same distance by growers.

Citrus Association.—Representations have been made, particularly from organisations in the Gosford district, for the sectionalisation of the Federation, and the Board has given consideration to this matter. It is felt that under the existing constitution half the members of the Board are citrus representatives and that any matter put forward by any section of the citrus industry receives just as much consideration as it would under a purely sectional association. Is addition, quite a number of the citrus districts are also interested in other fruits. As it was felt, however, that the desire was rather for a Citrus Marketing Association, the Board appointed a committee of citrus representatives to prepare proposals for the organisation of an association within the Federation which might meet the wishes and yet be later developed into a Marketing Association, and these proposals are being submitted to growers.

Orange Carnival.—The Secretary reported the successful holding of the Orange Carnival, for which approval was given at the last meeting. Some useful propaganda was secured which should be of benefit to the industry.

Agents' Commission.—Correspondence from two district Associations, asking the Board to approach the Agents' Association with a view to the revision of the existing commission rates by the deletion of the 6d. flat rate charge, thereby providing that a 7½ per cent. commission be made the only rate that may be charged.

Seville Oranges.—An inquiry through the Federal Citrus Council, asking for information on the following points which is required for negotiations with Canadian Canners Ltd., of Ontario:—(1) Approximate quantity of smooth or rough Sevilles produced in N.S.W. (2) Approximate quantities used for factory purposes. (3) Approximate quantity available for export during next season. (4) The price per ton at which growers would be prepared to sell.

It was decided to forward an appropriate reply and to indicate an f.o.b. price of 8/- per 1½ bushel case.

Codlin Moth Control.—The Department of Agriculture advises of being in favor of enforcing bandaging in those districts in which growers' organisations wish same to be carried out. This request was forwarded to the Department as a result of a resolution of the last Annual General Conference, and the Department now wishes to know which districts desire bandaging of pome fruit trees enforced.

Apple and Pear Export Council.—A report furnished by Mr. H. V. Smith, one of the Federation's delegates, who attended the last meeting of the Apple and Pear Export Council held in Melbourne in August, was considered by the Board. In regard to grading regulations, it was reported that the proposal by N.S.W. to amend the regulation was defeated. Although the regulations are not being literally interpreted, inspectors were applying commonsense judgment, and although the regulations themselves may not be entirely satisfactory, the administration of the regulations is such as to provide that the ultimate result is satisfactory. The opinion was expressed that it is quite useless for N.S.W. to bring the matter forward again unless the other States are first of all approached and definite suggestions made to them with a request for consideration. With regard to export Apples, the old Canadian case, 20 x 11½ x 10, is to be eliminated from the export cases.

Mr. Smith further suggested the formation of a New South Wales organisation to handle Apple and Pear export matters by the formation of an export association within the Federation.

It was decided to endeavor to carry out this latter suggestion and a scheme will be prepared for submission to those growers who are interested in Apple and Pear export.

It was also decided to extend the thanks of the Federation to Mr. H. V. Smith for the able manner in which he represented the Federation at the meeting in Melbourne, and also for the report submitted by him to the Board.

Rough Handling.—The Market Representative reported having attended the wharves on each loading day, and that generally speaking fruit is being reasonably well handled.

Correspondence was considered from both State and Federal Governments in regard to legislative action to minimise losses occasioned by rough handling.

Thrips.—Reports were received relative to the damage being done by the present infestation of "thrips," and it was decided to thank the Department of Agriculture for the work that is being done in an endeavor to find considerable control measures and to ask if some experiments could be carried out with a view to finding a repellant spray, also to ascertain if the Federal Government's officer now investigating the pest has proceeded far enough with his investigations into the life history of the "thrips" which would enable it to be dealt with during other stages of its development.

SHEPPARTON CANNERY.

Final Payment to Growers.

The directors of the Shepparton Fruit Preserving Co. Ltd. decided to make a third and final payment on fruit supplied to the cannery last season of £3 a ton for canning Apricots, Peaches, and Pears, of £1 a ton for Apricots and Peaches supplied for jam, of £1 a ton for Prunes and Quinces, and of £5 for Figs. This brings the total payment for canning fruit up to £10 a ton for the season.

The announcement came as a pleasant surprise to growers, who had not expected more than another £1 a ton. At the outset of the season the payment was fixed at £5, with no undertaking to pay anything more unless circumstances warranted it, which it was not expected would be the case at the time. The sum of £10 a ton is the average paid by the cannery over a period of years.

CITRUS GROWERS.

A Board, consisting of Messrs. W. Cattanach (Chairman), J. Lockhead and W. Jackson, has been appointed to enquire as to what area and capital value of land is required for a living area for the production of citrus fruit.

A meeting was held at Murrabit on October 14. Mr. E. A. Williams presented figures showing the average outlay on a ten acre block, and he considered 15 acres of A grade land, or 20 acres of B grade land necessary for successful operation. The Board was also addressed by Mr. A. W. Schwennesen (on behalf of Lemon growers), Mr. J. A. Egan (Mandarin growers), and Mr. D. J. Walters.

The Victorian Fruit Marketing Association.

The annual meeting of the Victorian Fruit Marketing Association was held at the Commercial Travellers' Association Board Room on Friday, October 2. There were present: Messrs. H. G. Colombie, G. W. Brown, F. Cave, J. W. Bailey, W. H. Carne, J. B. Mills, C. M. Griffeth, F. R. Mellor, A. S. Harrison, C. J. Parnham, E. I. Lawford, W. A. Webb, K. Eagle, W. P. Hutchinson, S. E. Scott, J. M. Jacobs; Messrs. J. M. Ward and E. E. Meeking, Dept. of Agriculture; R. E. Boardman, Secretary. Mr. H. G. Colombie presided at the morning session.

Hail Insurance.—Mr. Brown reported that whereas the Red Hill district had been able to secure hail insurance, other districts desiring similar provisions would need to make direct approach to the insurance company. So far insurance had been effected through the Union Insurance Company (Dalgety).

Financial Statement.—The financial statement was read by the Chairman of the Finance Committee (Mr. Brown), this showed a credit balance of £226/18/2, and amount outstanding for levies £229/3/-.

After debate, the resolution was lost. On the motion of Messrs. Parnham and Carne, it was decided that the total levy for the coming season be three-eighths of a penny, growers and shippers to each pay three-sixteenths of a penny per case.

The Thrips Menace.—The Chairman suggested that the Apple and Pear Export Council should be approached, in-C.S.I.R. to have a scientist set apart to continuously study the thrips pest. It was decided, on the motion of Messrs. Parnham and Bailey, to request the Agricultural Department to insert notices in the press and to broadcast the latest spraying formulae to assist in the control of thrips. It was further decided to approach Dr. Rivett (Council for Scientific and Industrial Research), asking him to meet the Research Committee at an early date in order to give information concerning the present activities of the C.S.I.R. in the study of thrips.

Mr. H. G. Colombie Appreciated.—Mr. F. R. Mellor spoke appreciatively of the services of Mr. Colombie in the formation and conduct of the V.F.M.A., and moved that the heartiest thanks of the Association be tendered to Mr. Colombie. Mr. F. Cave seconded, and the motion was supported by growers and shippers present, also by Mr. Ward (Superintendent of Horticulture). Mr. Colombie suitably responded.

Australian Apple and Pear Export Council.—Mr. Mills reported that the Markets Department had acceded to the request of the Council for the collection of a levy not exceeding ½d. per case on all Apples and Pears exported, both f.o.b. sales and the consignment business. The other States had been communicated with, outlining a suggested cable to the Overseas Fruit Federation regarding the continuance of the ½d. per case contributed by the brokers. Mr. Brown spoke hopefully regarding th coming season's export and the necessity for the continuance of the advertising programme in the United Kingdom. He advocated the early completion of the arrangements for the sending of the Fruit Delegation to England. It was decided, on the motion of Messrs. Mills and Carne, that the V.F.M.A. outline a programme for the Fruit Delegation, consisting of a grower, shipper and expert to visit England for submission to the Australian Apple and Pear Export Council.

The Menace of the Thrips.

Scientific Research is Imperative.

(By F. Thomas, Bunyip.)

ORCHARDISTS have been unfortunate in suffering two invasions of thrips within five years. Like the poor, they are always with us, but we take little notice of them, until they come in myriads and compete with us for the fruits of the earth. They have a long and honorable history, and have survived where many species have become extinct. They have been found preserved in the rocks and in amber, and are found in almost all parts of the world.

Insect or Man.

Who is to dominate the earth, the insects or man? This question is not absurd, when we think of the locusts in Africa, who come in such incredible numbers that they darken the sky, and devour every green leaf in their passage. A few months ago Kenya Colony suffered such an infliction, and the camera verifies the reports of eye witnesses. For centuries the mosquito held the Panama zone, and with the help of Yellow Jack, held man at bay, while at the present day some parts of Northern Canada are closed to man during the summer by this scourge. Large areas of Central Africa are left desolate through the tsetse fly, and in Australia we know all too well the mischief caused by caterpillars in our crops and the fruit fly in our Peaches.

With just a slight variation in our climate, the thrips would be in attendance every year when our Apples and Pears came into blossom, and it would be no longer possible to grow Apples in Victoria, or the southern districts of South and Western Australia.

The Life History of the Thrips.

To combat any insect pest we must know its life history. The eggs are laid on the under side of the leaves, or about the base of the buds of the food plant. They are very small and kidney-shaped. They hatch in about fourteen to twenty days, depending on the temperature. The larvae are white or yellow, and moult twice at intervals of three to five days. There are two further moults in the pupal stage, at intervals of two to three days, and the perfect winged insect then emerges, and within a day or two begins to lay her eggs and start a new life cycle. The time required is therefore about one month. The female is said to lay about five eggs a day, so that new broods are constantly being born, and as the adult insect may live for ninety to a hundred days, it is easy to see how rapidly the numbers increase. In mild winters the thrips remain active, or at least alive throughout the year, but in general "some late adult females hibernate, and produce a small brood in the early spring, and from these is produced the next summer swarm."

The Damage to the Fruit.

The thrips seem to damage the blossoms in two ways. Their mouths appear to be fitted for both biting and sucking, and they attack the petals and the pistil of the plant. The larvae are so small that they can readily enter the buds a fortnight before they open. Sometimes they seem to bite their way in; sometimes they slip down between the sepals and the petals, and enter the buds near the base. If they attack the petals, the sap flows out, gums the leaves together, and the bud never opens. Secure from sprays or rain, the thrips enjoy the delicate stems of the stamens, and the tender pistil, and the mischief is done. This year it was noticeable that in many blossoms that looked fresh—the stamens and pistils were dry and gritty and could be broken to powder in the fingers. If the pistil is damaged the nucleus in the pollen grain cannot reach the seed, and the Apple, which is only a case for the seeds, fails to develop.

What Are We to Do?

It is clear that climatic conditions affect the numbers of thrips that are present in October, and that we cannot control these conditions. By observing such conditions we may be prepared for an invasion—but at present there seems so little that we can do. This year we had a long, mild autumn, a wet but mild winter, with an unusual freedom from frosts, and a warm week or two in September—all favorable conditions for the insect tribes. The bush was in flower throughout the winter; all varieties of Mimosa and Wattle were in flower earlier than usual, and all of them provide food and shelter for thrips. The Capeweed, the field Peas, the Dogwood on the roadsides, were full of them in early September.

We are advised to keep our orchards clean, but with the bush just beyond our fences, this is useless. We can kill the thrips easily by oil and nicotine sprays, but the damage is done in the buds, and the open flowers are alive with the insects again within two days. The orchardist is helpless.

It is a Job for the Scientist.

We must either find a spray mixture that will deter them from attacking the buds, or find means to cope with them by disseminating a disease, or a parasite. Many growers feel aggrieved that five years after our terrible losses in 1927, we are compelled to try the same methods that proved futile before. The full facts were laid before the Bureau of Science and Industry both by individuals and by Governments, but as yet we have no relief, and can do nothing better than to pray for rain and cold weather.

Orchardists to-day are very near the end of their resources. Australia three months ago was on the verge of brankruptcy, and needs every pound that our exports can provide in London. A scientist at £1,000 a year would be a cheap form of insurance against a loss of two million cases of Apples at five shillings.

* * * * *

The writer wishes to acknowledge his indebtedness for many of the facts in this article to a paper on thrips read before the Field Naturalists' Club of Victoria by Mr. Reginald Kelly, F.E.S.

CALIFORNIAN DIRECTOR OF AGRICULTURE.

Thrips Expert Appointed.

Mr. Dudley Moulton, County Horticultural Commissioner of San Francisco, has become Director of Agriculture in California in place of Mr. George Hecke, who recently retired.

Mr. Moulton is a capable horticulturist. He is probably one of the best informed men in the world on the subject of thrips.

FRUIT DIET FOR HEALTH.

Mr. J. P. Gibson, fruitarian, 64 years of age competes in Marathon Race.

26 Miles in 3 hours 46 minutes.

Lectures on Fruit and Health are Being Given Daily.

Mr. J. P. Gibson

EAT MORE FRUIT.

An appreciation of Mr. J. P. Gibson, 64 years of age, a fruitarian, who has been rejuvenated after years of ill-health, and who ran in the Marathon race at Melbourne on October 3, covering the 26 miles in 3 hours 46 minutes. This is believed to be a world's record for a man of 64 years.

Youth, we are told, has been setting the pace—
But sixty-four years and a Marathon race!
Sixty-four years! Good people behold!
Sprightly and keen as a twenty-year-old.
What is the secret, Young-old J.P.G.,
Of your wonderful vim and vitality?

Sixty-four years and a Marathon race!
Slender of form and quite youthful of face.
Notice these facts, all you eaters of meat,
Rotund at waistline and groggy on feet,
Here's a fine athlete which none will dispute;
He does it on diet consisting of fruit.

Up with the lark at the dawn o' the day,
A plunge and a swim in the waves of the Bay,
Lungs well expanded with briny ozone,
Munching an Apple gives bodily tone.
Fruit in the morning, at noontide, at night,
Thus Mr. Gibson keeps Merry and Bright.

Glands from a monkey are quite out of date;
A diet of fruit will rejuvenate.
Pep up your muscles, your sinews, your nerves,
Fruit eaten daily will round out the curves.
Sixty-four years! His example we bless.
May your shadow, Friend Gibson, never grow less.

—C.S.B.

* * * * *

NO FINER DEMONSTRATION of rejuvenation has ever before been presented to the Australian public—and we believe the world at large—than when Mr. J. P. Gibson, who is close on 64 years of age, ran in the Marathon race at Melbourne, on October 3.

An old man at 45, down and out at 52, and to-day an athlete. The change has been wrought by—Right thought, right diet, right exercise.

His food consists mainly of fruit, nuts, raisins, sultanas, salads, wholemeal bread, cheese and honey.

Under the auspices of the Australian Fruit Council, Mr. Gibson is daily delivering inspiring health talks to all sorts and conditions of people: amazing interest is being shown.

Mr. Gibson's one big request to his audience is—**One fruit meal a day.**

He has addressed tens of thousands of boys during the past few weeks: the boys are tremendously interested in the Marathon run—26 miles in 3 hours 46 minutes.

Dad has now to buy fruit by the case.

Fruitgrowers' Associations, wholesalers and distributors are co-operating with the finance committee of the Fruit Council to provide funds for this magnificent work to be continued. Full particulars are obtainable from the Hon. Sec., Mr. J. G. Aird, Ringwood, Vic.

* * * * *

Those who have not yet sent along their contributions are urged to do so without delay.

Never was there a more favorable opportunity to assist in a campaign to increase the consumption of fruit.

Tasmania.

Mr. P. H. Thomas, Chief Horticulturist, states, on October 22, as follows:—

So far, Apricots and Plums have blossomed well and appear to have a heavy setting. Pears have generally blossomed well, and the earlier varieties synchronised with the warm spell of weather, should be conducive to setting and good yields. Apples have blossomed more profusely than any season during the last decade.

The position in regard to the different varieties may be more definitely estimated at the end of the month, as many of the later kinds have only just reached the "pink" stage.

* * * * *

Mr. J. P. Piggott, General Manager, Port Huon Fruitgrowers' Co-operative Co. Ltd., writes as follows under date October 12:—At the present time we cannot give you any idea as to the estimate of the coming crop, but from all appearances and if the elements are kind, we should have a crop similar to last year.

New Norfolk (13/10/31).—Re fruit prospects: it is rather early to give a reliable estimate, but indications are as follows:—

Apricots.—Not many grown; heavy setting. Plums.—Not many grown; prospects medium to heavy.

Apples.—Prospects of an excellent blossoming. Early blossoming varieties now in full bloom; later varieties showing well for bloom.

Pears.—Medium to heavy blossoming. A little early to give setting prospects.

Tobacco Culture.

About 100 acres of tobacco are being planted out in the district, mainly by hopgrowers, who have been compelled to reduce their acreage of hops owing to the falling off in consumption.—H. Ashton Warner.

Kingston (15/10/31).—Although it is too early to say how the fruit is going to set, there is a wonderful show of bloom on almost every variety of Apple and Pear.

Present indications point to an extra heavy crop, but this will be largely governed by weather conditions during the next few weeks.

In spite of a rainfall well above the average, fruit trees are looking remarkably well and healthy, and there is every appearance of a much heavier crop of fruit in this State than we have had for several years.—B. J. Pearsall.

COLOMBIE CUP.

Presentation Ceremony at Somerville.

THE Mechanics' Institute, Somerville, was tastefully decorated with streamers, flowers, gum leaves and colored electric lights when 150 guests assembled at the invitation of Mr. H. G. Colombie to witness the presentation of the Colombie Cup and certificates. The tables were generously supplied with refreshments. Music and elocutionary items added to the general harmony.

Mr. Colombie congratulated the Peninsula Co-operative Packing Co. on winning the cup, also the Harcourt Fruit Supply Co., and the Tyabb Co-operative Cool Stores and Packing Co. on gaining certificates. The points were really very close, viz., 77, 75, and 74 respectively. All the prizes this year were won by packing companies: this was as it should be. There had been a great improvement in the Australian pack. We must be up to date in this matter. Hit or miss marketing methods were gone for ever. The number of brands and varieties should be reduced. A parcel of 4,500 boxes of American Apples sold in England contained only five brands and three varieties. On the same day 5,783 cases of Australian Apples were sold—there being 100 brands and 22 varieties. He congratulated the I.F.M. Co. on its enterprise in opening the Peninsula packing shed.

The Colombie Cup.

The cup and certificates were presented by Mr. J. M. Ward, Superintendent of Horticulture.

Interesting speeches were made by Mr. H. Barber, who was chairman of the Packing Co. during the year in which the cup was won; Mr. T. E. Butler, Secretary (on behalf of the staff and congratulating the shed managers (Mr. A. Shout, Somerville, and G. Butler, Hastings); Mr. Harry Ford, on behalf of Harcourt Fruit Supply; Mr. P. Val Kerr (Tyabb); A. S. Harrison and Snyder (I.F.M. Co.); F. Thomas, M.A. (Bunyip); G. W. Brown (Red Hill); C. M. Griffeth (President Victorian Fruit Marketing Association); E. E. Meeking (Department of Agriculture); J. W. Bailey (Narre Warren). Mr. G. H. Sprague (Hastings) thanked the shippers for their attendance. Mr. Ahearn (Pakenham) responded on behalf of the visitors. Mr. T. G. Tyler congratulated the Department of Agriculture on conducting fruit packing classes.

The shippers present included Messrs. F. Cave, I.F.M. Co.; S. E. Scott, J. M. Jacobs, N. McLean.

The meeting closed with a vote of thanks for Mr. Colombie.

The cider supplied by the Two Bays Nurseries & Orchards Co. was pronounced to be of good quality.

MARKETING BILL.

To be Revived in Victoria.

Fresh and Canned Fruit to be Included.

It is announced by the Victorian Cabinet that the Primary Products Marketing Bill is to be reintroduced into Parliament.

Last year the Bill passed through all stages in the Legislative Assembly, but was rejected by the Legislative Council.

It is understood that the Bill is to be practically on the same lines as previously.

NEED FOR SCIENTIFIC RESEARCH.

Berry Growers Urge Study of the Thrips Scourge.

Representatives of the berry-growing industry of Victoria waited on the Assistant Minister for Agriculture (Mr. Pollard) on October 13. Mr. J. Valantine, Vice-President of the Mt. Dandenong Fruitgrowers' Association, spoke of the great damage caused by thrips. Mr. W. Jeeves, President of the United Berry Growers' Association, stated that the Government had not fulfilled its promise to have the thrips scourge systematically studied.

Mr. Pollard defended the action of the Government. The Department had a staff of trained officers engaged in research work.

Merrigum.—Mr. W. J. Foster reports that the season indicates a short crop.

In the tobacco nurseries along the Murray in New South Wales the seedlings are a month late.

Bunyip.—Mr. F. Thomas reports on October 19 as follows:—

Apple, Pears and Plums are grown in most orchards.

Plums are very light—even Japanese Plums being light, and Grand Dukes, Jefferson, Diamond, Angelina Burdett nearly barren.

Pears are not largely grown, and crops are fair to medium. Josephines are light, Packhams very fair, W.B.C. fair to medium.

Apples are as yet uncertain. Thrips are present in great numbers. All the best flowers are full of them. Twenty to thirty thrips are often visible in a single blossom, while buds are browned and the petals distorted. In many cases, even where the petals look fresh, the stamens and pistils of the flowers are brown and dry, and therefore useless. Rokewoods were the first to flower, and have set fairly well. Gravensteins have set their early flowers, but Jonathans and Yates are doubtful. Delicious and Sturmers are a little later, and seem to be greatly affected. Growers are concerned for the Rome Beauties and London Pippins, for many buds, though yet very small, are already turning brown and thrips are busy about them.

There is much dissatisfaction that the Bureau of Science and Industry has not as yet investigated this matter.

The Sultana Crop Estimates for the Coming Season.

Heavy Yields Anticipated.

(Contributed by the Commonwealth Research Station, Merbein.)

THE YEARLY ESTIMATE of the Sultana crop yield is based on what are termed bud counts. These have been made on Sultana vineyards on several different sites and in a random manner over the Mildura settlement for a number of years, so that we can compare the estimated crop and the actual realisation in many different cases. It has been found that the bud counts are a reasonably accurate method of determining the coming crop, so much so that the yearly estimates are now eagerly awaited by growers and the various marketing bodies. The bud counts for 1929-30 were the highest on record, and the resultant crop was a record one; again the 1930-31 estimates were the lowest on record, and the crop was correspondingly low.

Present indications are that the yield for 1931-32, based on estimates made from the bud counts, will be nearly as high at the 1929-30 yields, and about the same as the 1928-29 yields.

The method of making the bud counts may be of interest. All the buds on a vine are systematically examined, taking a cane at a time, the observer noting at each bud whether it shot, and if so, whether the resultant shoot was fruitful or barren. It is necessary to examine about 1,500 buds, representing about 100 canes, or about 17 vines, on each site, in order to get results that are comparable from year to year. In the table, each cross signifies a bunch on a shoot (two crosses—two bunches), each dash represents a barren shoot, and each dot represents a dormant bud. The following are actual results obtained this year:—

Cane No.	Bud No. along cane.																
	Base	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.	.	.	–	.	.	x	x	–	x	x	.	.	–	x	x	–	–
2.	–	–	.	.	–	.	x	.	.	x	.	x	x				
3.	.	–	.	.	x	x	x	xx	x	x	.	x	–	–			
4.	.	.	.	.	x	–	–	.	–	x	x						

Having obtained the requisite number of bud counts, the ratio of the fruitful shoots to the total number of buds laid down on the vine at pruning, taken as a percentage, is then the measure of the potential crop yield. This figure is comparative only, and comparisons between different years can only be made on the one site; the figure varies considerably between different sites in any year, but the figures come in the same order for the various plots in any sequence of years.

Notes on Vine Diseases.

(By A. V. Lyon, M.Ag.Sc., Commonwealth Research Station, Merbein.)

Black Spot.—With the continuation of fine weather, the position is so far well in hand, but no means safe.

There was a decided development, particularly on unswabbed vines, at the very early stage of growth, which now shows as pits at the base of the forward canes.

Even if fine weather continues, at least two more sprayings are necessary—one to ensure protection as the bunches are lengthening, and one specially directed on to the bunches after setting.

Erinose.—This small organism is very prevalent this season, and is damaging a great number of leaves. The symptoms are a gall-like growth on the leaves, followed by a whitish, and in the later stages, reddish hairs on the under side of the leaf. The best protection is a winter swab (strong lime sulphur wash). However, it is now too late for this treatment, and all that can be done is to apply liberal sulphur dustings, which will reduce the damage considerably. The effect of acute attacks of erinose is general weakening of the vine, and reduced sugar from loss of leaves.

Thrips.—Thrips are present every year on vine flowers. There is little evidence so far that they affect the setting, as they have been observed in seasons when the setting has been particularly good.

The Quality of the Sulphur.—Flowers of sulphur, or very finely ground sulphur, are necessary for dusting purposes. The coarser ground sulphur (locally known as crude sulphur) is certainly a little cheaper, but vaporisation is so slow that it is of little use.

Copper Containing Sprays.—An increased use of homemade Bordeaux (bluestone and lime) or Burgundy (bluestone and soda) is a pleasing feature of this year's operations in this district.

RUSSIAN DRIED AND FRESH FRUITS.

Is There a Danger of Dumping in Great Britain?

Situation Under Observation.

IN ANSWER to a query from Red Cliffs regarding a report as to the possibility of the dumping of Russian dried and fresh fruits in the United Kingdom, Mr. Parker Moloney (Minister for Markets) states that this matter has been under observation for some time by the Empire Marketing Board: the reports of Russian dumping appear to have been exaggerated, but should subsequent events disclose any likelihood of Australian dried and fresh fruit interests in Great Britain being jeopardised, suitable representations will be made to the Imperial authorities by the Commonwealth Government.

Mr. Bruce Anderson, 54a Hoddle-street, Abbotsford, Vic., advises that the Tasmanian agents for "Clensel" are now Messrs. Maxwell, Foster, 29 Cedric-street, North Hobart, Tasmania.

Sugar for Fruit Processing.

Prices Fixed for Fruit ∴ Export Trade to be Assisted.

THE SUGAR CONCESSION COMMITTEE has decided on the minimum prices for fruits used by jam and canned fruit manufacturers during next season. Only those manufacturers who pay the prices fixed or higher prices will be entitled to receive from the Committee the domestic rebate of £6/5/1 a ton on the cane sugar used by them in processing fruit products. The allocation of a sum of £110,000 made available for the assistance of the fruit industry under the terms of the new sugar agreement was also decided by the Committee.

The following minimum prices had been fixed for sound, fresh fruit, payment being for delivery at the grower's railway siding or at the factory:—

Berry Fruits.	For Jam Manufacture. Price a lb.	For Canning. Price a lb.
Black Currants	2d.	2½d.
Gooseberries	1d.	1¼d.
Loganberries	1¾d.	2¼d.
Raspberries	2d.	2½d.
Strawberries	3d.	3½d.

Stone Fruit.	For Jam Manufacture. Price a ton.	For Canning. Price a ton.
Apricots	£7	£10
Peaches	£7	£10
Plums	£7	£10
Quinces	£6	

The foregoing prices for berry fruit were bedrock, stated the Chairman, Mr. A. R. Townsend, and were subject to revision in an upward direction by the Committee on or before November 23. The present arrangement had been made because of the "uncertainty about the production of the berry fruits for the season and the probable serious effect of climatic conditions." In addition to paying these minimum prices manufacturers would be required to permit an inspection of books, accounts, sales, and other documents by an authorised representative of the Committee. Processors could pay higher prices for their fruit if economic circumstances permitted. All prices applied to the next season's crop only. In fixing the prices the Committee was influenced by low returns received last year and the present favorable exchange on exports.

The sum of £10,000 would be provided out of the special fund of £110,000 to assist the export of surplus manufactured berry fruits of the 1931-32 crop (Black Currants, Gooseberries, Loganberries, Raspberries, and Strawberries), subject to the submission of a plan to the Committee by those interested not later than November 14. Not more than £70,000 would be allotted for the export to the United Kingdom of canned Apricots, Peaches, and Pears of the 1931-32 pack. This amount would be reduced by an amount equivalent to any increase in the net f.o.b. market value a dozen 30 oz. cans above 7/9 for Apricots and Peaches and 8/3 for Pears.

The Committee would also be prepared to assist similarly the export of canned berry fruits, canned Pineapples, and other fruits if the canners submitted to the Committee by November 14 details of the probable exports to the United Kingdom and f.o.b. costs of each variety.

The Committee had decided to alter the previous practice of calculating the cane sugar content of jam exported from the Commonwealth at a flat rate of 55 per cent. In future the export rebate on jam would be based on a percentage of sugar as nearly equal to the actual sugar content as possible. This would result in an appreciable increase in the rebate paid, and should assist the export trade in jam. Manufacturers concerned in the export of jam were invited to forward to the Secretary of the Committee, care Department of Markets, 419 Collins-street, Melbourne, information as to the actual cane sugar content of each variety of jam with substantiating evidence.

SUMMER TRAINING OF YOUNG DECIDUOUS TREES.

A Seasonable Reminder.

It is necessary during the spring and early part of the summer to look through young deciduous trees periodically, and to direct their growth by pinching back the growing points of leaders which are outstripping their neighbors. This keeps the growth even (states the N.S.W. Department of Agriculture).

When the leading shoots of young trees are extending very fast it is sometimes necessary to pinch them back to prevent them being broken out, or blown out of shape by heavy winds. Care should be taken when doing this that the shoots are not cut or pinched back below the tender growth, as if the more mature woody growth below is cut into there is a liability to permanently stunt some kinds and varieties of fruit trees. Even with vigorous older trees it may be advantageous to thin the growth to some extent to allow more light to penetrate through the tree.

This work must be carried out carefully, and it is far better to underdo it than to overdo it. If shoots are thinned out to too few the remainder are far more liable to be destroyed by winds. Superfluous shoots toward the centre of upright growing trees encourage the desired shoots to grow with more outward spread. Moreover, it should never be forgotten that the leaves are the lungs and digestive organs of a plant, and any reduction of foliage checks the growth of the plant.

Trees have have been reworked by budding or grafting require the same care as the young trees, but though strong shoots from the stock must be checked or entirely removed if they are sapping the growth from the buds or grafts, it is a distinct advantage to leave as much foliage as possible.

CHILEAN NITRATE OF SODA.

(To the Editor, "Fruit World.")

Sir,—On page 564 of your issue of the 1st instant, appears a notice under the heading—"Chilean Nitrate Offices Closed." The subject matter is misleading—it is only the "Agricultural Service which is temporarily closed, i.e., "advice to users."

Chilean Nitrate of Soda can still be freely purchased in Australia from all the principal fertiliser merchants, and can be imported to-day, as in previous years. The importations into Australia last year, were 123,635, so you will readily understand the trade is of considerable importance.—Yours,

R. DUNDAS SMITH,
Consul-General for Chile.

Sydney, 8/10/31.

New South Wales.

Murrumbidgee Irrigation Areas.

Peach Crop Short, Owing to Frost and Thrips.

(By Our District Correspondent.)

The Apricot everywhere is heavy, and with the brighter prospects for its disposal to the canneries and for drying, the growers are looking forward to receiving a payable price this season.

Owing to the shortness in the Peach crop of nearly all varieties, it is hoped that Apricots may find a readier sale than last season.

The shortage of the Peach crop will be very marked, and opinion differs as to the actual cause of the failure.

Undoubtedly in many places frost is a largely contributing factor, as the lower portion of the trees are clear of all fruit, while there still remain a fair sprinkling on the tops of the trees, and also on the portion affected the tips of the leaves are blackened as though scorched, which is characteristic of frost damage.

Undoubtedly, in other parts of the area thrips was responsible for a large proportion of the damage, as the Golden Queen Peaches were more affected than the red flowering Pullars.

Thrips are more inclined to attack the lighter colored blossoming varieties of trees, and Prunes have also suffered severely.

It is quite possible, however, that the exceptionally heavy winter rains lying for so long on the soil has saturated it to such an extent as to weaken the vitality of the trees, and as there was a somewhat hot spell of weather for a few days at blossoming period, followed by cold nights, the rush of sap drawn up during the day time might have been too strong and forced off the blossom before it had set. The fact remains that stone fruits, with the exception of Apricots, and a few early maturing Plums, will be exceptionally light.

It is a very noticeable feature that where a few early variety Peaches are growing, they are carrying a heavy crop of well-matured fruit, while trees alongside of Queens and even Pullars have very little left on. The early flowering may have set and attained a fair size, as in the case of the Apricots, before the advent of the thrips, or else the fruit was so far advanced as to be able to resist the few slight frosts that occurred at the critical period of flowering.

The winter generally has been one of the mildest on record, and it is doubtless a combination of several factors that has accounted for the loss.

Pears have in many cases set well, and Apples are showing a very heavy blossoming, but it is as yet too early to state what the ultimate result of the setting will be.

Peach leaf curl is much in evidence, although not really a very bad infestation, but that any appears is probably due to the fact that the winter spraying could not be carried out owing to the heavy rains saturating the land and making it almost impossible to get on with a spraying outfit.

Sultanas, Currants and other vines

are showing well for fruit, and so far no signs of black spot have shown up in spite of the occasional bursts of hot weather that have occurred.

Most of the growers swabbed their vines, and many have already given a spray before budburst, and the vines are looking fresh and free from disease.

The heavy toll taken last season by black spot and downy mildew has put the growers on their mettle, and most of them are taking no risks this season.

Navel Oranges

as a general crop are about all picked, although on a few farms there still remain a fair quantity of high quality fruit to be marketed, and both Navel Oranges and Valencias are showing a very heavy blossoming in most places.

The growth of both "green manure crops" and natural herbage has been exceptional this season, and some truly splendid crops of Tick Beans were to be seen on many of the citrus groves, while on other farms Peas, or Vetches and Barley mixed were used in preference, but the year has been an exceptionally favorable one in this direction, and many growers have left the ploughing in of their green crops later than usual in order to counteract against any excess of moisture in the soil.

Irrigation and Seepage.

The extremely valuable work that is being carried out by the Seepage Investigation Committee, under the direction of Mr. F. K. Watson must be of great ultimate value in providing the data of the depth of the waterable on various farms, and on most farms there are now a series of depth pipes placed in order to check the rise and fall of the water, and growers generally are exercising far more care than in the past when irrigating their land.

The type of soil on the irrigation areas is totally different from anything on the River settlements, and the heavier soil has to receive heavy dressings of gypsum to make it fit to work and prevent caking, while the growing of green manure crops is almost an essential factor to success.

Successful Show at Griffith.

The 13th annual Griffith show, opened on the 13th of the month under the most favorable conditions, and anyone with a superstitious strain over the fatal number must now be disillusioned.

The high waving spear grass on the hills surrounding the showgrounds made a pretty sight, and prevented the dust from blowing to the extent it has done in previous years.

The entries in live stock and ring events were a record, and some fine cattle and sheep were exhibited. Poultry was more in evidence than in previous years, and birds of many favorite breeds were shown.

In the pavilion the exhibits would have been a credit to any show, and the two district stalls were far above the average.

The Beelbangera exhibit took first prize, but Hanwood was very close up to it, the former having more room at their disposal made a rather more comprehensive show.

Citrus fruit, although few in numbers for such a large area, were very high in quality, and finer Navel or Valencia Oranges would be hard to find.

Mediterranean Sweet and Joppas and other varieties were not in evidence, and few of these are grown to any great extent.

Some exceptionally choice Lemons were shown, and also some very fine quality Grapefruit.

The Griffith Producers staged a good show of citrus and canned fruits in conjunction with exhibits by the Yenda Producers, advertising the various brands of fruits put up on the Griffith end of the area.

The flower exhibits were very fine and numerous, the best yet shown, and elicited many complimentary remarks from visitors.

The dried fruit section was poorly represented, although the few exhibits of Apricots and Peaches were of a very high quality, none better could be shown anywhere, but this section could be very much improved on in number of exhibits another year.

The prizes for wines of various types were well distributed between McWilliams and the Beelbangera wineries, and made a fine comprehensive exhibit.

In the growers' section of wine exhibits, J. P. Hannan and A. Manaro took first prizes for wine of 1931 vintage.

The whole show was a credit to the district and was well attended.

Peaches Very Light at Leeton: Apricots and Vine Crops Good.

Leeton (October 18, 1931).—The prospects are very poor for Peaches—intermediates, Sims, Peaks, Levis, Phillips about one-third of a normal crop; Golden Queens and Pullars very little better.

Prunes, a complete washout.

Plums, Santa Rosa and Angelina very light.

Williams Pears at present look like setting a fair crop.

Apricots, good.

The foregoing applies to the whole of the Leeton end of the area, as well as my own orchard. Some growers say they have practically nothing in the way of Peaches.

The vine crop promises very good. I have a splendid show of Sultanas and Currants—the best since I've been on the area. The only danger is frost at present. Thrips are supposed to have done the damage, but a late visitation of rust in February and March, and abnormal wet winter probably had a bad effect on the Peaches.—F. Attenborough.

LEETON CANNERY.

Coming Season's Arrangements.

Mr. J. Brady, manager of the Leeton cannery, states that the Commission has definitely announced its intention to accept the whole of the clingstone Peach crop that is offering this coming season.

Whilst no definite statement can be made at present regarding the Apricot crop, it is thought that from 550 to 600 tons will be accepted as against 400 tons last season.—"Murrumbidgee Irragator."

Griffith.—A report to hand from Mr. Wilson Moses, General Manager of the Griffith Producers' Co-op. Co. Ltd., Griffith, N.S.W., dated October 2, is as follows:—

Regarding prospects for next year, the Apricot crop is a very heavy one, but it is too early yet to speak of any of the other varieties. From reports, a considerable amount of damage has been done to the Peach crop through thrips, and it looks as if the Prune crop will be reduced by 75 per cent., owing to the same cause.

It is too early yet to have any idea of the Grape position, but it promises well, and if the weather remains favorable, there should be a good crop.

There is only a 50 per cent. Valencia crop in sight, and we expect better prices for the fruit.

There is little of interest to record except that the continued agitation for reviews and writing down still goes on. There was a board of review appointed for horticultural farms, but so far there has been no results. Considered opinion is that it will be better for the Government to reduce the debts, cut its losses and stop any further financing of settlers by the Water Conservation and Irrigation Commission. However, at the present time matters are in abeyance, waiting until something comes out of the present review.

Griffith Producers' Co-operative Co. Ltd.—The annual meeting was held on September 29. The directors' report showed a turnover in the trading department of £28,018, as compared with £32,157 for the previous year. The turnover in fruit was: Canning, £21,669; dried fruit, £11,000; citrus, £66,906; sundries, £5,000; Ohanez, £1,699. Total, £106,274. Including trading department, the total turnover was £134,292.

The profit and loss account showed a profit of £500/7/11, as against £719 in 1929-30.

The directors stressed the need for further capital, as additions to cool stores, shed and plant were necessary. It is proposed to submit a proposition for a revolving fund to be created by means of a levy of 1d. per case on all citrus fruit.

The amount of citrus handled by the 1930 pools was as follows:—122,945 Navels, 70,412 Valencias, 3,405 Mediterranean Sweets, 1,203 Joppas and Silettas, 3,442 Mandarins, 5,260 Lemons, 2,135 Grapefruit—a total of 208,622, a record for the company.

In June, 5,000 1½ bushel cases of Navel Oranges, and 1½ bushel cases of Lemons were exported to Canada, and in July 2,400 Navels, 1,500 Mediterranean Sweets, and 800 Lemons.

Apple Export.—190 cases of Granny Smiths were exported to England. These netted 10/- per case clear for the fruit.

The Chairman of Directors of this company is Mr. C. T. Lasscock, General Manager, Mr. W. Moses, and Secretary, Mr. R. Mallinson.

Batlow (14/10/31).—Mr. H. V. Smith, Manager Batlow Packing House and Cool Stores, states that a preliminary estimate of the coming crop prospects is very difficult to give, as there is a very heavy infestation of thrips, and this is expected to reduce the crop very considerably, particularly Plums and Pears.

All the Apple varieties are carrying a heavy load of blossom buds, and growers are spraying continuously in an effort to control the thrips. It will be the end of the month at the earliest before we have any idea of what is likely to set.

Bega, 14/10/31.—Mr. J. W. Doyle, orchardist, Bega, N.S.W., writes under date October 14: I am unable at the present time to forecast anything approaching a fair estimate of the 1932 crop of Apples and Pears, due to a heavy infestation of "thrip." This is our first season's experience of this kind.

Forecast.—Apricots, medium to light; Plums, heavy to medium; Peaches, early and midseason have set heavy crops.

Weather conditions during autumn and winter have been most favorable, the latter being very mild, with only an occasional heavy frost.

Heavy winds in the early spring dried out all the surface moisture. Fallowed land retained a good deal of moisture.

For the last two months only three-quarters of an inch of rain has fallen.

Principal varieties of Apples grown are Jonathan, Rome Beauty, Delicious, McIntosh, Granny Smith, Five Crown, Shepherd's Perfection, Gravenstein.

The Young District.

Prospects for the orchardists in the Young district in 1931-32 are very blue indeed. The Peach and Nectarine crop has almost wholly failed. A few of the early Peaches seem to have escaped the ravages of the thrips and the frosts, but the later varieties have been cleaned right up.

The position with regard to Cherries in the district is at present obscure. It looks as if the earlier Cherries have been more or less destroyed, whilst the mid-season Cherries are showing prospects of a moderate crop. The late Cherries at time of writing are in bloom, though appear to have been badly affected by frost. Thrips are very active at the moment, and it is too early to indicate what will be the result of either the activity of the thrips or the counter-measures by the orchardist.

Prune Crop Destroyed.

The most disastrous thing that has happened to the Young fruitgrowing industry is that the Prune crop, which was expected to be in the region of 1,000 to 1,200 tons this year, has been almost completely obliterated, and present estimates are for a total crop of about from 100 to 200 tons. Experienced orchardists regard even this estimate as being too high.

A good deal of controversy ensues as regards the reason for the trouble, but the concensus of opinion backed by expert knowledge indicates that the thrips have been very active, sterilising the blossoms throughout the district, and very poor crops will ensue.

It is a very unfortunate thing that these circumstances should arise this year, particularly as regards the soldier settler orchardist, who is in a very desperate position. These growers have been looking forward to the coming crop to overtake the excessive leeway of the past few years, but it looks as if they are to be again disappointed.

With regard to Apples, some state their Apple crops are more or less extinguished, but again it is considered too early to offer any sound opinion as to what the position is, and it will be at least next month before the growers will know their fate in this direction.—T. A. Tester, Young, 13/10/31.

Orange.

(By Our District Correspondent.)

The prospects of the coming crop are somewhat problematical, on account of late frosts, and devastation by thrips. The Apples seem to be suffering the worst. It is yet too early to make a reliable estimate, but I should say, from present indications, the Cherry crop will be good in both early and late varieties. The Plum crop will be light, some varieties being a "washout." This is not wholly attributable to thrips, as some varieties only had a light bloom. Pears—a medium crop generally; some varieties light.

Apples, I think, will generally be on the light side. In my notes next month will have a better idea of what this crop is likely to be.

Conditions generally are good, apart from pests.

Capertee.—Messrs. Sim Bros., fruitgrowers, Capertee, N.S.W., report under date October 16:—

Re fruit crop prospects this season, I regret to say that we are no exception to the growers in other localities. All in the grip of the thrips invasion. Just what fruit they may allow to set it is too early yet to say.

The promise, so far as the bud showing at pruning, was for a heavy all-round crop, but thrips altered that.

The only fruit that appears to be setting here are W.B.C. Pears. Whether or not they will shed, we shall not know for a week or so. Possibly about 30 per cent. of normal. The Apple crop will be less than that.

Jonathan, Delicious, and Granny Smith Apples did show a sickly bloom. Five Crowns and Romes failed to open. These latter two look as though blasted by fire.

Spraying experiments have been carried out, with poor results. The pest is everywhere—grass, bushland, and gardens swarming.

Nothing but a general rain, and heavy at that, will, in the opinion of the writer, check the pest. Anyhow, it is much too late for spraying now, and thrips were in evidence since spur burst stage.

The crop estimate is at the moment an unknown quantity in our locality, and, I fancy, is the general condition in most N.S.W. fruit centres.

Curlwaa.—At the recent annual conference of the Curlwaa Co-operative Citrus Society, the report stated that 42,000 cases had been packed from July, 1930 to June, 1931; of this quantity 22,500 had been sold on the open market in Melbourne, 15,000 direct from the shed to local buyers, 900 to China, Eastern Canada and England, 2,700 to New Zealand and the other States. The shipment to Hong Kong realised slightly more than Melbourne parity in June.

Artificial Coloring.—Some shareholders strongly objected to the artificial coloring of immature Oranges. The general opinion of the meeting was that the maturity standard should be raised.

Election of Directors.—Messrs. R. McKenzie, H. F. Midgley, L. Cumming and A. Scott were elected to fill vacancies on the board of directors. Mr. W. B. Crang, of Wentworth, was reappointed auditor.

Bathurst (19/10/31).—The position in regard to crop estimates for the coming season is still very obscure, owing in the main to a severe thrips invasion.

Apples are the chief fruit grown here, and as far as can be seen to date Jonathans, which blossomed freely, appear to be setting a crop. Cleos. also look well for a crop. Granny Smiths are very uncertain. Some orchards here bore a heavy crop last year, and it is problematical, even where this variety blossomed fairly well, if a crop would have set even had there been no thrips. The blossom of this variety is easily susceptible to damage by this pest owing to the fact that the pistils of the flowers are long and slender, and much more easily damaged than the blossom of, say, Jonathan, where the pistils are bunched and stouter. The thrips seem to have a very sweet tooth for the pistils, and in very severe cases these organs are damaged to such an extent before the flowers open that there is no chance of a crop setting.

Romes are just now in full blossom, and where good work has been done with the spray pump it is healthy, bees and insects are busy in it, and the thrips appear to have almost disappeared as quickly as they came.

The setting of Pears appears to be very patchy. My Packham's Triumph seem to have set very well in spite of the fact that the blossom looked sick. Williams are good, largely owing to the fact that just as they blossomed the weather gave the thrips a bit of a check.

Peaches have set pretty well, as far as I know. I have some trees which have too many on.

As far as the Apple and Pear position is concerned, we will not know what the crop will be like until the early December drop.

Growers here, on the whole, have been putting up a good fight to save their crops, and the spray which seems to have given most satisfaction consisted of lime sulphur and nicotine, using 4 per cent. of the former and 1 in 600 of the latter in the early stages of the buds' growth, and reducing the former to 2 per cent. for the last spray before the buds opened.

There is a lot of room for research work in connection with the thrips pest. We get an invasion, and then forget about it until the next one is heralded. It is really much more serious than codlin moth.—E. Ray.

Messrs. Gordon Edgell & Sons Ltd., Bathurst, write on October 19:—Thrips have done a great deal of damage in this district, and Apples and Pears will be light generally.

Of the Apples, Granny Smiths seem worst hit, and of the Pears, Packham's Triumph.

N.S.W. RAILWAYS DEPARTMENT SELL 6,300,000 ORANGES!

In the three months ended September, the New South Wales Railway Department sold from the irrigation area, 75,000 cases of Navels, comprising 6,300,000 Oranges. The cheques paid to the growers through their organisation totalled about £20,000, added to which were big payments for dried fruits. In 1929-30 it sold 175 tons of Prunes from the area at 9d. per lb., and this year's sale will bring the total to well over 300 tons.

The Railway Department also sold 375 tons of Grapes. Sales of Raisins approximate about 25 tons a year. Negotiations are now proceeding between the Department and the Banana growers and the honey industry.

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BANDAGING FOR CODLIN MOTH CONTROL.

ALTHOUGH BANDAGING THE TREES is not now a compulsory measure for the control of codlin moth in N.S.W., it is strongly advocated, and any pome fruitgrower who desires better protection for his crop will still be well advised to continue to bandage, though it must be borne in mind that unless the bandages are regularly inspected they will do more harm than good. Experiments conducted by the N.S.W. Department of Agriculture have shown that from 40 to 75 per cent. of the grubs which escape destruction by spraying reach the bandages, and if careful and regular inspection is carried out the bulk of these can be destroyed.

SULPHATE OF AMMONIA.

An announcement is made in this issue that the price of sulphate of ammonia has been substantially reduced as from October 15.

With the reduction of 8/- per ton announced to take effect as from September 1, this makes a total recent reduction of 35/- per ton. This is the lowest price at which sulphate of ammonia has ever been offered to the Australian primary producer, and it is most appropriate that such should be the case when our primary industries are so bent on cutting costs.

It is likely that fertiliser companies will take advantage of the lowered price of sulphate of ammonia to offer some of their mixed lines at a reduced cost, or they can—and this is probably what most fruitgrowers would wish them to do—increase the nitrogen content of their present mixed manures, which many assert are not sufficiently rich in soluble nitrogen.

Nitrogen is an expensive plant food, and educating the farming and fruitgrowing fraternity up to its more liberal use has been a long, difficult, and expensive process. The position reached, however, is that sulphate of ammonia is coming into its own, and in the agricultural and horticultural press it has a distinct news value.

Under the circumstances, it is safe to assume that the fruitgrower who in the past has turned down nitrogen on the plea of expense, will now be coming forward to use it on a liberal scale—particularly when fruitgrowers' associations and co-operative bodies are able to buy on liberal discount conditions.

WORDS FAILED HIM.

A fiery-tempered Colonel received a letter which enraged him. This was his reply:

"Sir,—My stenographer, being a lady, cannot type what I think of you. I, being a gentleman, cannot think it. But you, being neither, will understand what I mean."

Queensland News and Notes.

Uniform Banana Packing: Proposed Banana Agreement With Wholesale Trade: Pineapple Pack: Tobacco Culture.

(By Our Correspondent.)

Gympie, 1/10/31.—The output of fruit from the Gympie district for the month of September, in cases, exceeds 24,300 Bananas, 14,700 Pineapples, 3,000 Beans, 700 Peas, 700 Papaws, whilst other fruits total 800 cases.

The weather has been particularly dry, consequently the fruit is slower reaching maturity, when rain comes the output will be more than doubled.

Tobacco Culture.

Mr. Tarrant, tobacco expert, Queensland Department of Agriculture, recently visited the district, and explained cultural methods to the growers. Local districts appear suitable for tobacco culture, there being the typical yellow subsoil so essential to the light colored leaf. Curing flues would have to be erected—preferably on a co-operative basis. Experts state that Queensland grown leaf compares more than favorably with the imported.

Uniform Packing of Bananas.

Arrangements have been finalised by the directorate of the Gympie Fruitgrowers' Association to conduct experiments in the uniform packing of Bananas: the trial will be 200 cases per week over a period of two months. Should the trials prove commercially successful, a central packing shed will be established, and the fruit marketed under a uniform guaranteed brand. It is understood that the Committee of Direction will advance the money for the preparation of the shed.

Owing to recent low prices for Bananas, many growers are going in more for Pineapples. Papaws are also being more largely grown.

Proposed Banana Agreement.

At the recent meeting of the Banana Sectional Group, the report of the two representatives of the Committee who were deputed to visit Melbourne, Sydney and Adelaide (Messrs. K. Hack and A. E. Maher), was presented and appended is a resume.

Agreements:—Messrs. Ellison and Dowling (solicitor to the C.O.D.), in consultation with the representatives, prepared agreements for presentation at the southern capitals, met and drew up the conditions on the lines laid down in the circular sent to growers during the acquisition ballot and suggestions submitted by our southern representatives. Separate agreements were drawn up for merchants and agents. Before proceeding south, we, in company with Messrs. Ellison and Wilson, met the executive of the New South Wales Banana Growers' Federation at Tweed Heads. After full consideration they expressed satisfaction at the fairness to the trade, but on account of the financial position consideration should be given agents and merchants who were not just now in a position to erect up-to-date ripening facilities by giving them some little time to conform to the provisions. Also in the event of N.S.W. Government increasing the amount of the bond to £1,000, such to be taken into consideration when fixing the C.O.D. bond. Later the President of the N.S.W. Federation wrote confirming this decision.

Adelaide.—A meeting of the Merchants' Association was held and the amended agreements were presented, discussed and fully explained, but opposition from the outset was very pronounced, the proviso re the bond being severely critised. The Chairman of the Association was absent, but before we left Adelaide he returned, and we had an opportunity of explaining the agreement to him. Later we received their notification that they had definitely decided not to sign the agreement. No reasons were offered, but on enquiring from them we learnt that exceptions were taken regarding ripening, arbitration and time for fixing of prices, unfortunately another meeting could not be arranged, otherwise we may have been able to come to some finality.

Sydney.—Only those people handling Bananas were present at the meeting, which had been arranged. Very little discussion took place, the most outstanding point being the matter of freights on consignments which did not realise sufficient to pay same, it being suggested that the C.O.D. should assume responsibility and collect from growers future consignments, a meeting at a later date was arranged and Mr. Maher remained to give any further explanations the meeting eventuated, but no further progress was made, the trade deciding not to sign the agreement, the objections being the same as Melbourne, they failed to see why a bond was necessary as the agents had to furnish one to the Department of Agriculture.

Melbourne.—The white and the Chinese sections met separately, whilst we were desirous of meeting those handling Bananas, practically the whole of the trade were present and all received a copy of the proposed agreement. Each clause was fully explained and discussed, and the trade stated definitely that if some of the clauses were drastically enforced it might hinder the efforts to push the sale of Bananas. We pointed out that this was necessary from the growers' point of view to have the trade working under an agreement which gave the growers the protection they were justly entitled to, and which would enable us to prevent a continuance of the abuses which we understood existed; owing to its comprehensiveness they asked for time to consider the agreement in conference with the Chinese merchants.

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New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

We met the Chinese section the following day, who raised the same points for objections except that they desired that we should give consideration to an overriding charge for country trade suggesting a charge of 2/- per case (maximum) as a commission of 7½ per cent. did not pay for the trouble. The combined trades (whites and Chinese) met us later and suggested several alterations that would make the agreement worthless from our point of view. After fully considering these suggested alterations an amended agreement was drawn up, which we considered most liberal to the trade, and we felt that we would have no justification in refusing to sign it. As much time was taken up in these negotiations, and as the trade was not inclined to move quickly in the matter, it was decided to proceed to Adelaide and receive the amended agreement on our return.

On our return to Melbourne we received a letter from the trade notifying us that they had definitely decided not to sign the agreement. Considerable discussion centred around the report, and the disappointment of members was very marked, some favored a limitation of agents, others thought the "bond" clause was open to abuse. A member asked how were there to know which of their fruit was ripened and which sold green? Mr. Ellison said we would have to trust them and check them up when possible. It was freely expressed that information had not been supplied to growers, and Mr. Hansen took exception to the fact that the growers knew more than he did, and he would like to be in a position to answer questions put to him by growers. Mr. Ellison advised that he had nothing definite to report in this connection.

The result of the ballot for representatives on the C.O.D. resulted in Messrs. Hack and Buchanan being elected, Mr. Maher, the defeated representative, congratulated Messrs. Hack and Buchanan on their appointment, and promised them all assistance possible. It was resolved to place on record in the minutes the best thanks and appreciation of the services of Mr. Maher. Messrs. Maher and Hack were elected to the Banana Protection Board.

Pineapples.—The return of Mr. Ranger, Manager of the Committee of Direction, is awaited with considerable interest. The previous years' output of canned Pineapples has been placed successfully.

It was thought for some time that there would be some difficulty in disposing of them, but the C.O.D. in the first place approached the Government Treasurer for financial assistance, which, after Cabinet consideration, was favorably considered, however, in the meantime, Messrs. Harrison's Ramsay Prop. Ltd., agreed to advance the wherewithal, which was accepted by the growers.

Consequent on these arrangements, the factories processed this season's crop, and growers received 5/- per case at growers' station, cases returned.

Ballandean.—Very heavy ground frosts were experienced in the Stanthorpe district during October, the grass registrations for the 12th and 13th being 19.3 and 18.7 degrees respectively, the latter being a record low temperature for the month of October. This, however, was broken on the 19th, the grass reading being only 15.3, a temperature only exceeded twice during the past winter. However, on the 12th and 13th the screen temperatures were comparatively much higher, 31.5 and 33.1 respectively, and as far as can be learned the fruit and vegetable crops escaped severe damage.

No official records are kept in Ballandean, but the temperatures here range from 6 to 10 degrees higher than Stanthorpe. In the low-lying areas to-day Tomatoes and Pumpkins were blackened, and it is feared that a certain amount of damage must result to fruit crops and Grape vines.

Cold westerly winds have been experienced periodically for some weeks past, which may have an adverse effect on the setting of Apples, which, however, show good promise, judging by the blossoming.

Plum crops appear to be light, and the Peaches patchy. Grape crops promise well, but it is yet too early to give a reliable estimate.

Ballandean growers specialise chiefly in Peaches of many varieties, which grow to perfection, Japanese and English Plums in variety, and Grapes, the main varieties of these being Muscat (black), Gros Colmar, Black Prince, Royal Ascot, and Waltham Cross; though of recent years considerable areas are being devoted to export varieties, Red and Black Malaga, Purple Cornichon, Hanaport, etc.; and arrangements are being made with the Committee of Direction to supervise a temporary packing shed for export Grapes this coming season. Contracts have been made for the supply of 2,500 cases to be sent to New Zealand, Canada, and the East as an experiment.

As Ballandean Apples come on the market very early, Gravensteins, Scarlets, and other early dessert Apples, and early cooking Apples, are the main crop.—Cowley & Co.,. Ballandean, October 19.

FRUIT CROP ESTIMATE.

Mr. Geo. Williams, Director of Fruit Culture, Department of Agriculture, Brisbane, has kindly supplied the following information, this being a rough estimate of the fruit crops for the ensuing season. As many of the trees have not completed flowering, it is rather early to anticipate results, upon which weather will have much influence. No record is kept of the quantities of the different varieties produced. The distances over which fruit are grown (1,000 miles north and south) are much too wide to attempt it under present conditions:—

Pineapples	44,000 cases
Bananas	955,000 cases
Oranges	300,000 bushels
Mangoes	52,000 bushels
Apples	186,000 bushels
Plums	59,000 bushels
Papaws	4,500 cases
Peaches	110,000 bushels
Grapes	2,000 tons
Lemons	18,000 bushels

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South Australia.

The monthly meeting of the Executive of the South Australian Fruit Marketing Association held at Adelaide on September 25.

There were present: Messrs. H. J. Bishop (Chairman), M. G. Basey, D. W. Hannaford, F. B. James, R. B. Pritchard, A. O. Peterson, A. V. Pitt, G. Quinn, J. B. Randell, H. N. Wicks, R. Willsmore, and Secretary. Apology from Mr. P. R. B. Searcy.

Mr. G. W. Selth.—In reference to Mr. Selth's statement at the August meeting that Messrs. Paterson & Co.'s. application for membership would be conditional in regard to levy and rules. It was unanimously decided that the application from Mr. Selth for membership, on behalf of Paterson & Co. Ltd., would be contingent on the acceptance of the existing rules at the time the application was made.

Apple and Pear Export Council.—It was decided that Mr. H. G. Colombie be appointed to act as Mr. H. J. Bishop's substitute in his absence from meetings of the Australian Apple and Pear Export Council, the appointment to be subject to revocation by the Committee at any time, and that a copy of agenda for any meeting should be submitted to both delegates in South Australia.

With regard to Pears, South Australia desired to use the half Canadian case or trays of depth required by fruit, so that a certain number of same would exactly equal the outside measurements of the Canadian bushel case.

It was resolved that a sub-committee be formed to deal with overseas advertising, and the following were appointed:—Messrs. H. J. Bishop, F. B. James, G. A. W. Pope, P. R. B. Searcy, and J. B. Randell.

Shipment to Argentine.—Mr. Willsmore reported that since sending out notifications in regard to proposed shipment of fruit in the Argentine, information had been received cancelling the original offer and nothing further could be done until further information was received. It was reported that great difficulty would probably be experienced in obtaining the necessary freight.

Annual General Meeting.—It was resolved that the 3rd annual general meeting be held at the Board Room of the Adelaide Fruit and Produce Exchange on Friday, November 6, commencing at 2 p.m., the Hon. S. R. Whitford, M.P., Minister of Agriculture, to be asked to open the conference.

Research Sub-Committee.—The Research Sub-Committee reported arrangements had been completed for experiments in connection with codlin moth control, and arrangements had been made to supply one four-gallon tin of molasses, and four dozen glass jam jars to each of the six members who would carry out the experiments. Mr. H. J. Bishop kindly consented to obtain the molasses on behalf of the Association, and to allow the jars to be sent to his store, where he would arrange for distribution. The Chairman of the Research Sub-Committee expressed his thanks to Mr. Bishop for his kindness.

SOUTH AUSTRALIA.

Mr. H. N. Wicks, Balhannah, South Australia, reports as follows under date October 17:—

All Apples and Pears bloomed heavily. The Pears have set with me, and also the Prunes, but the latter are very patchy and not a uniformly heavy crop, although some trees are loaded.

Some Plums close to me have been wiped right out with frost, although they had set and were as large as the head of a nail. This is not general, I believe, but Plums are not heavy in this district, I am given to understand.

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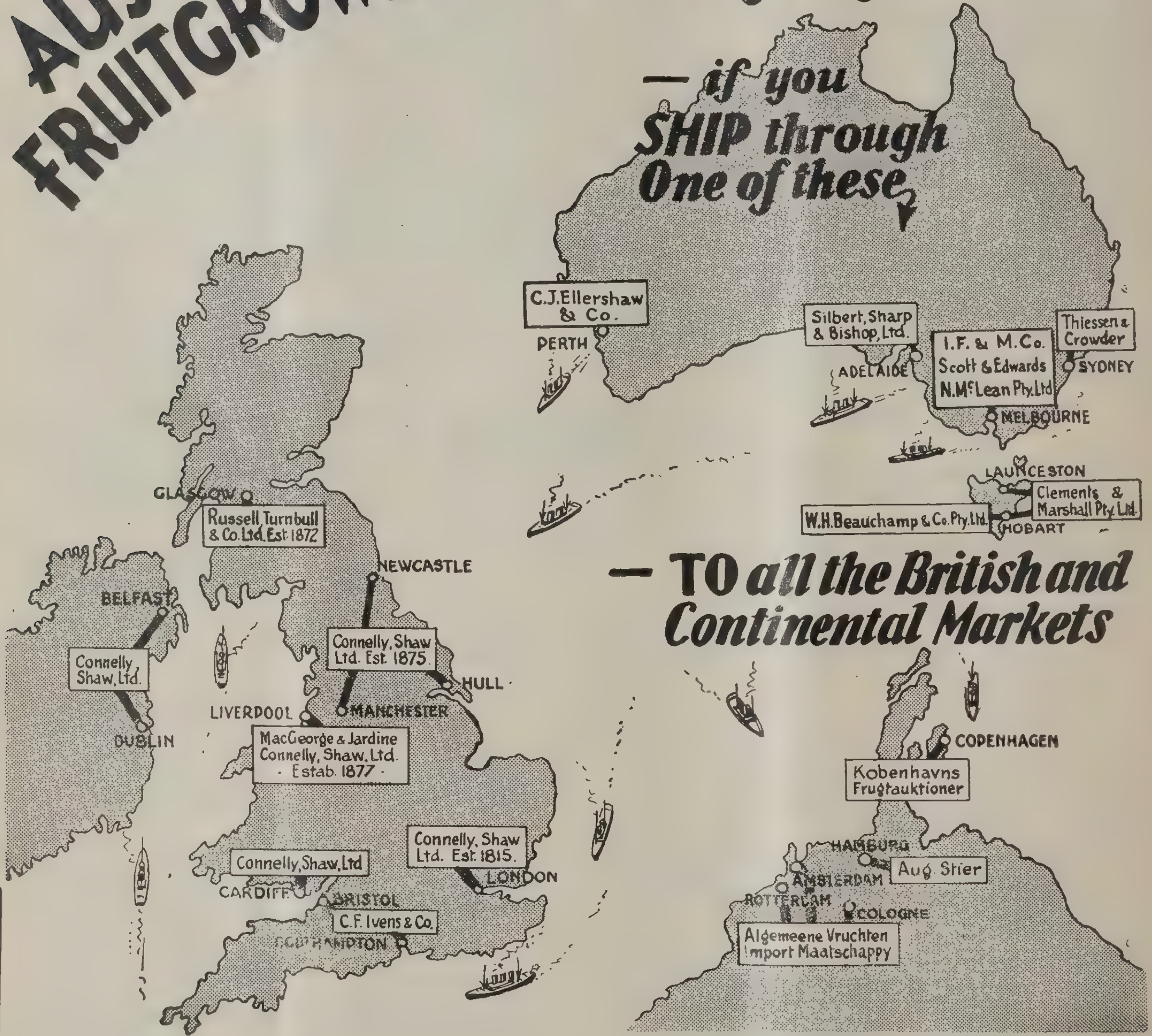
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The early blooming varieties of Apples are, I think, safe, although attacked very badly by thrips towards the end of the blooming period. The late blooming varieties are still in the balance. Thrips have been very bad, and Thursday this week was hot and close, and the development of the pest, in only an hour or two, was amazing. We are now having a very cold snap, with hail, which will check them, and, I hope, save the Rome Beauty crop in some measure, at least; but although the buds are well blackened on the outside, the inside seems fairly sound, and we are hopeful of at least a partial setting, although it will be a week before I can advise definitely.

Gumeracha (17/10/31).—Mr. J. B. Randell, "Kenton Park," Gumeracha, South Australia, writes as follows regarding fruit crop prospects for the coming season:—

It is somewhat early to do more than make a preliminary survey of the outlook. In stone fruits (chief of which in this district are Plums in the leading varieties for drying, canning, and jam), the blooming has been from medium to fairly heavy, and present appearances seem to point to a fair setting.

Pears are blooming moderately, and Apples are very heavy, the trees being literally a mass of white so far as the earlier blooming varieties are concerned, and the buds seem to indicate an equally heavy crop of blossom for the later varieties. Two heavy frosts are causing some misgiving, as there is a fear that the flowers will have been injured by the extreme cold. Thrips are in evidence, some orchards being only lightly infested, while reports concerning others are to the effect that the pest is very bad. Trees so far are looking very healthy, with little or no sign of Fusicladium.

Expectations at present at for a heavy crop of Apples and medium to heavy in Pears and Plums. Cultivation of orchards is somewhat late this season, consequent upon an extremely wet winter having made it impossible in most cases to take the implements on to the land. The work is not in most cases well in hand, and another couple of weeks should see most of it completed.

A few growers have made small extensions of their fruit areas during the past planting season, such having been made almost exclusively of export varieties of Apples. The uncertainty of overseas markets, together with shortage of funds, owing to the financial depression, has, however, prevented some intending planters from carrying out their earlier intentions in this respect.

Dairying is receiving more attention of late, and the practice of pasture improvement by means of topdressing, etc., is becoming general throughout these hills districts.

Basket Range (17/10/31).—A period of three years with rainfall below the average, followed by an abnormally wet winter, left fruitgrowers here with the idea that things might happen.

Well, they have.

Basket Range is a well-sheltered district, with a wonderful natural drainage system, situated in the heart of the Mt. Lofty Ranges. Our principal fruits are Cherries —which we claim to grow the world's best—colored Apples, Plums, and Nectarines, besides the various berry fruits. In fact, every fruit indigenous to the temperate zone can be, and is, grown here.

In giving a preliminary estimate of coming crop prospects, a more definite estimate could be given in a fortnight's time; but with the aid of the optimism which is the primary producer's only untaxed asset, I will paint as glowing a picture as possible.

The earliest blooming varieties of fruit, Nectarines and Jap. Plums, struck a very wet period for blooming, and Nectarines particularly are the lightest for years. Cherries and Plums followed under conditions much more favorable. My indications are for a very satisfactory crop of mid-season Cherries, and from fair to good with the later sorts. St. Margarets, which I do not grow extensively, are the most doubtful, due to their blooming time coinciding with the visitation of thrips. Thrips were in evidence in the Apple bloom, from the time the earliest commenced to blossom, and have increased in numbers until they have completely ruined the flower buds of the late varieties while still in the pink stage.

Jonathans, Rokewoods, Statesmen and Democrats had a chance to flower fairly freely, and while being hopeful of a fair setting, one can't help feeling that there is an element of doubt. The later flowering sorts, although carrying enough buds for a full crop, I can see no hope for. The inside of every blossom examined—that is, the few that have been able to open their petals—is a teeming mass of these insects. I have tried practically every spray recommended—some at double strength—and they thrive on it.

I have observed a neighbor wither a tree with invective, but the thrips still carried merrily on.

Just what effect this pest will have on the berry fruits is uncertain as yet, but our experience of similar conditions in 1922 does not indicate a big crop.

Although the crops generally have not come up to the expectations indicated by the prolific display of fruit buds, it is quite likely that most markets will be fully supplied. —W. J. Bishop.

Angaston (16/10/31).—Severe frosts have caused considerable damage in some parts of the Barossa district, growers in the country from Lyndock to Nuriootpa being the principal sufferers, mainly the vineyards.

Lights Pass and Nuriootpa have also suffered in respect to Apricots, Pears and Peaches.

In the Angaston and Eden Valley districts very slight

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damage has been caused by the frosts. The prospects for Apricots are for a very light crop, whilst Pears, Peaches, Apples, Prunes and Currants are showing well, and given normal conditions, crops of these fruits should be very satisfactory.

Report by Angaston Fruitgrowers' Co-operative Society Ltd., W. J. Barley, Manager.

Mt. Barker.—Regarding fruit crop prospects, Mr. E. S. Davidson, of Poroona, Mt. Barker, South Australia, advises on October 18 as follows:—It is a little hard to give an accurate estimate of the setting of the crop here--just at the moment. However, the indications are that there will be a big crop in this district (Mt. Barker) and in the Onkaparinga district. In our orchard (101 acres) Dunns are setting very well; Jonathans and Rokewoods promise to be equally good. Rome Beauties and London Pippins are flowering well, and, as there was a very light crop last year, they should be very good. Beurre Bosc Pears, as well as Josephine, have set a nice crop, and promise to be very clean.

So far the weather has been excellent as far as fungus diseases are concerned, there being very little rain since the end of September. A strong north wind, together with a mild heat wave, did not help the flowering in this district last week, but otherwise conditions have been very favorable.

Providing nothing unforeseen turns up, there should be a heavy crop in South Australia owing to the lean time that we had last year.

Later.—I have just heard of a mild attack of thrips in the Forest Range district, but not serious.

The Mid-Murray Districts.

Heavy Vine Yields Forecast; Peaches Light, Pears Heavy.

Renmark (18/10/31).—Crops of Sultanas, Currants and Gordos are exceptionally promising, and reminding one of the 1929-1930 years.

Frosts have occurred in many places, but the damage is not very great. On October 3 the first late frost made its appearance, and damaged a strip of vines at Chaffey, Renmark, and Barmera. On October 17 another one occurred at Renmark, but not with any great severity, but enough to curl up the young leaves in many places.

Peaches and Nectarines are an almost complete failure this year. In the first place, they set very badly, owing to cold windy weather at flowering time; then curl leaf and blight appeared and finished the havoc already begun.

Pears (Duchess) flowered profusely, and are setting well. The first spraying has been completed, and a good crop promises.

On October 5 Mr. A. V. Lyon, M.Sc., addressed members of the Renmark Agricultural Bureau and all interested on the matter of standardisation of dipping methods for Sultanas. Advocating a mixed caustic soda and carbonate of potash combination, as this dip proved to the satisfaction of packers its superiority under varying weather conditions.

Last year, tests of various dipping methods were carried out in 14 separate trials all along the river, and in each case tests came out with identical results in each of the 14 tests, so that there was no hesitation in advocating a dip which had been proved a success.

Pride

YES, Sir, demonstrate to every man who handles your pack of fruit that you are proud of the product of your orchard. IT PAYS! Tom, Dick and Harry, carter, railway employee, wharf labourer, appraiser, selling agent, BUYER, all of them respond to good packing pride.

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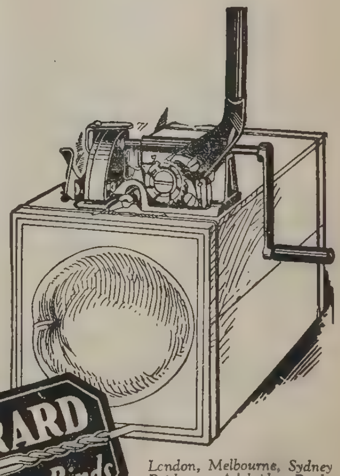

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The codlin moth was well on the wing in early September this year, many being caught in lures set out for the purpose.

Growers of Pears in these parts have a yearly battle with the moth, and up to the present time the moth has had the best of it. There is quite a belief that owing to our extremely hot summers we have a succession of broods following one another so quickly that a continuous supply of grubs is always on hand.

Experiments at the Berri Experimental Orchard are being made to try and determine whether definite broods do hatch out.

The health of Mr. H. S. Taylor is causing his friends some considerable concern. Mr. Taylor has never spared himself in his work as editor of the "Murray Pioneer," and wielded a forceful pen where the interests of the primary producer was concerned. For over 25 years he has labored most days and well into the night, without a break, and this has undermined his constitution. Some months ago he had a definite breakdown in health. An operation was recently performed, which we hope will be for the best.—Nemo.

SOUTH AUSTRALIA.

Severe Frost Damages Vines.

A severe frost on October 11 severely damaged the vineyards in South Australia; it is estimated that 50 per cent. of the crop was destroyed.

At Barossa the loss is estimated at £50,000.

Vegetable growers in the Torrens Valley also suffered severely.

MANURIAL RESEARCH.

With the object of co-operating with the Australian and New Zealand Departments of Agriculture and other authorities conducting manurial trials, Pacific Potash Limited was registered in Sydney about the middle of this year.

The company is jointly representative of the German Potash Syndicate and the Alsatian Commercial Potash Society. These two companies have been, in the past, independently represented by Australian agents. Realising that considerable economies could be effected by the amalgamation of their interests, these organisations completed arrangements for direct representation.

In the first place the result of joint economies will be, as indicated, an increased attention to experimental work, and a field representative has already been appointed for Queensland and northern New South Wales. Other officers of the company will, from time to time, visit the centres of intensive agriculture in the Southern and Western States, and it is hoped that as economic conditions improve, a permanent field officer will be appointed in those districts.

At its head office, the company has technical men of practical experience who are at all times willing to receive and answer enquiries from growers on questions of correct fertiliser practise and other farming problems. This service is, of course, gratis to farmers.

An additional service, which is offered is a determination of lime requirements. The importance of lime in intensive farm practise is being recognised more clearly every day, and the generalisation may now be made that unless the soil is in a suitable condition with regard to lime, money spent on fertiliser is wasted. Pacific Potash Limited, therefore, invites readers whose fertiliser results have not come up to expectations, to submit samples for free examination and recommendation as to the type and quantity of lime necessary to put the soil into proper condition. Elsewhere in this issue we publish details of the method of collecting a sample, and the information required by the company in order to enable it to make its recommendations.

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Western Australia.

W.A. GROWERS' MARKETING ASSOCIATION.

Successful Annual Conference.

The first annual Conference of the Growers' Marketing Association was held at the Westralian Farmers' Building, Perth, on September 16. Representatives from 21 centres were present. Mr. R. S. Sampson, M.L.A., presided, and introduced the Hon. C. F. Baxter, Minister for Country Water Supply.

Mr. Baxter urged effective organisation. The Government had appointed a Committee to enquire into the Metropolitan Market Trust position; a reduction of high costs should follow.

Mr. Sampson attacked the sugar agreement: he urged increased propaganda to increase the consumption of fruit.

After an address by Mr. Prater, it was decided to join the Primary Producers' Association.

It was reported that satisfactory meetings had been held at Spearwood, Kelmscott, Osborne Park, Maida Vale, Gosnells, Wanneroo, and Carilla.

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The W.A. Fruit and Produce Auctioneers' Association wrote, stating there was a possibility of a stone fruit glut, and urging growers to severely thin the fruit.

At the instance of Mr. P. B. Brooks, it was decided to inform the Minister that the Topping Act was not being enforced, and to request that steps be taken to enforce it in the wholesale markets and the shops.

The following officers were elected:—Chairman, Mr. R. S. Sampson, M.L.A.; Hon. Secretary, Mr. A. Nock, Gosnells; Vegetable Section, Mr. P. B. Brooks, Mr. Geo. Tapping; Potatoes, Onions and Tomatoes Section, Mr. N. Thorsagdr, Mr. J. Arbuckle; Stone and Berry Fruits, Mr. T. Ilbery, Mr. W. Hart; Grape Section, Mr. N Marich, Mr. L. Thorn, M.L.A.; Citrus Section, Mr. W. C. Temby, Mr. H. A. Smith; Poultry Section, Mr. J. W. Rollinson, Mr. J. F. Vaughan.

Karragullen.—The Illawarra Orchard Co. (Hector J. Price, Manager) report as follows on October 14:—This is the earliest blossoming season for many years, and most varieties of Apples have definitely set. There has been a very heavy show of blossom. Thrips have made an appearance, but they seem to have come too late to interfere with the setting, except to the late blossoming varieties, perhaps.

Granny Smiths indicate a good crop, while Cleos., Dunns, Dohertys and Tasmas appear to be heavy. Jonathans should be medium, and Yates heavy, providing the thrips has not interfered.

There will be a light crop of Pears (Bartlett's) at Illawarra, as late frosts did a lot of damage.

Mt. Helena, 28/9/31.—In the 1930-1 season, there was a fairly heavy crop of almost all fruit except Peaches, which were on the light side. Prices were fairly good.

The principal Plums grown here are President, Satsuma, Santa Rosa, Shiro, Burbank, some Ponds, and some Wright's Early.

In Apricots there are Royal, Oullin's, Hemskirke, and others.

Peaches include Brigg's, Elberta, Sneed, and others.

The principal Nectarine grown is Goldmine.

The main Apples are Jonathan, Cleo., Dunn's, Delicious, Granny Smith, Yates, Rokewood, Doherty, Democrats, and Rome Beauty.

Pears: Du Comice, Packhams, Keiffer, Josephine, Winter Nelis, Bartlett (Williams), Winter Bartlett, Winter Cole and Howell's.

Oranges, mostly Navels and Valencias.

Also few Lemons and Quinces.

Prices were fair for the above fruits, although some high prices were paid for Peaches.

As for the overseas markets, principally London, the prices have been well maintained, more especially for Pears.

Citrus fruit and cool storage Apples have been very cheap.

The Association here prevailed on the Greenmount Roads Board (which is the district Vermin Board) to declare parrots, mostly "Twenty-eights" (native name Cowara), as vermin, and as the result of paying 1d. per head, has instituted a proceeding that it is hoped will be continued as vast numbers were destroyed.

The winter has been the coldest and wettest one known here, and even at this time a large number have not even started ploughing.

A commencement has been made with the formation of a Small-farms Marketing Association.—W. F. Ribe.

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WESTERN AUSTRALIA.

Good Vine Crops Showing at Guildford.

The prospect as regards crop appear to be very good. The Currant crop appears to be equal to last year's, which was a very good one. Most of the canes are carrying two bunches, and the vines have shot very evenly. There is practically no spot showing at present, but if the weather continues like it has been the last few weeks, we may expect it.

There is a good crop of table Grapes showing, consisting of Muscat, Red Prince, Red May, Red Malaga, Waltham Cross, Ladies' Fingers, Chasselas, Black Malaga, Purple Cornichon. The Santa Paula are on the light side. Wortley Hall are grown here, mainly for the second crop, which are not showing yet.

We had some good frosts in June this year, which forced the sap down and gave the vines a good spell in the dormant period, differing from last year, when we had no frost, the vines started to shoot as soon as the leaves fell.

The Technical School at Midland Junction has a horticultural class. This year we tried several kinds of cover crops on my property. They were all planted with 4 cwt. of super per acre. There were three varieties of Lupins, which were a failure, owing to frost and very cold weather in the early growing period. We had the most success with Dun Peas, Tick Beans, Beans and Peas mixed, and Vetches. I will give you the tonnage per acre, and the shrinkage when dried:—

	Dun Peas.	Tick Beans.	Beans & Peas.	Vetches.
Tonnage per acre	13 tons 7 cwt.	11 tons 19 cwt.	12 tons 5 cwt.	11 tons 11 cwt.
Loss of weight in drying	80%	77%	78%	77%

—H. Thomas, Guildford, 18/10/31.

PYTHON WIRE STRAPPING PTY. LTD.

The above company was recently registered in Victoria, and at an early date it is the intention of the directors to commence manufacturing their machines in Melbourne.

As the name of the company implies, the machine is for strapping cases of all descriptions. It has already been tested on over three thousand cases, and has proved satisfactory.

Early in August the inventors tried the machine on a large number of cases of Oranges, which were shipped to Canada. The machine was seen in action by fruit merchants in Sydney, and approved of by them.

The knot is the strongest part of the strapping, and a 15 or 16 gauge tensile wire will break before the knot will unravel. The knot is a triple twist, 3-6-3. The Python machine is automatic in action. By turning the one handle the tension is made—then the twist—and then the cut. The tension is adjustable by a finger wing nut, even to the extent of biting into the wood or breaking the wire. The ends of the knot are turned down, and in the case of softwood, actually press into the wood—an obvious advantage to persons who subsequently handle the case.

One of the outstanding advantages of the Python machine is the fact that wire can be used from the coil as purchased from wire manufacturers or the local storekeeper.

SULPHATE of AMMONIA

Drastic Cut in Price

Following our recent announcement that the price of sulphate of ammonia would be reduced by 8/- per ton as from the 1st September, we have now to advise of

A Further Reduction of £1/7/- per ton

as from the 15th October.

This cut makes SULPHATE OF AMMONIA the cheapest it has ever been in Australia, and should bring it under the favorable notice of all those primary producers, who, in the past, have not appreciated its virtues as an influence to bigger and better yields.

SULPHATE OF AMMONIA more than ever sustains its reputation as the cheapest source of nitrogen to the Australian farmer and fruitgrower.

The retail price is now £12/2/- per ton, free on rails, less 2½ per cent. for cash.

Supplies from all Fertiliser Companies, or their agents, or direct from The Metropolitan Gas Co., 196 Flinders St., Melbourne, C.1.

Literature from

NITROGEN FERTILISERS PROPRIETARY LIMITED

360 Collins Street, Melbourne, C.1.

New Zealand Fruitgrowers' Federation.

Annual Conference.

THE Fifteenth Annual Dominion Conference of the N.Z. Fruitgrowers' Federation was held on September 2 to 4. The Conference was officially opened by His Excellency the Governor-General, Lord Bledisloe.

There were present: Messrs. T. C. Brash (President), F. W. Cone, J. Dicker, A. M. Robertson, W. J. Rodger, W. A. Tate, T. H. Torode and H. Turner (directors); Mr. G. C. C. Black, M.P.; Mr. W. A. Bodkin, M.P.; Dr. Reakes, Director-General of Agriculture; Messrs. J. A. Campbell, T. W. Goodwin, Department of Agriculture, Horticultural Division. Also a number of visiting fruitgrowers.

Delegates from Provincial Districts were as follows:—Auckland—Messrs. Roy Beecroft, C. Ballantyne, F. Firth, S. W. House, H. S. Izard, J. A. Lambden. Canterbury—Messrs. E. Freeman, M. C. Ormandy, A. Roy, E. A. Stead. Hawke's Bay—Messrs. R. Paynter, J. P. Boyle, R. Wilson, Junr., F. J. Kirk. Marlborough—Mr. H. F. Hursthouse. Nelson—Messrs. A. E. Lindup, L. B. Robinson, A. Forsyth, A. McKee, A. Maisey, H. Chisnall. Otago—Messrs. A. Ashworth, J. Bennetts, E. Pinder, C. Weaver. Wellington—Mr. T. F. Conway.

The President stated that there were 26,000 acres in use in New Zealand for growing fruit on a commercial scale. New Zealand was now shipping fruit to the Continent, Canada, United Kingdom, Honolulu and South America.

Trading Results.

The balance-sheet, which was for 18 months, showed that for the 12 months ending December 31, 1930, trading showed an increase of £30,000, making a total turnover of almost £150,000. After making reasonable allowances and placing a reserve of £1,000 for local marketing, there was a net credit balance of £4,577/18/8 at profit and loss account. The President also made reference to the orchard tax and research work. In regard to cases, it was hoped that the Federation would not require to import any cases for the coming season. Orders for nearly 900,000 cases had been placed with the local box manufacturers.

Election of Directors.

Mr. F. W. Sisson was elected for Canterbury, and Messrs. Dicker and Rodger returned unopposed.

Resolutions were carried demanding that some protection be granted to New Zealand fruitgrowers against the importation of soft and stone fruits, Grapes and Cucumbers. A motion was carried that no importation of Apples be allowed into New Zealand until after the end of November, also that prohibitive or further duty be imposed on American fruits.

Fireblight Tax.—Resolutions were carried suggesting a tax of 5/- for each orchard and exemption of stone fruit trees from the operation of fireblight tax.

Resolutions were also carried regarding brokers' charges, utilisation of surplus fruit, advertising stone fruit, silver blight, diseases, etc. Approval was given to the suggestion to issue horticultural diplomas through the Institute of Horticulture.

Export Conference.

During the Conference, a special meeting of delegates from export districts was held, and dealt with representation on Control Board, Government nominees, London representative, closing dates of picking fruit for export, Government guarantee, allowance for russet on London Pippin being increased to 15 per cent., Pear packages for export, stage of maturity for picking different varieties of Pears, trade with the East.

The total exports of fruit from New Zealand to oversea countries was as follows:—Apples (1931) 1,267,168 cases, (1930) 1,231,343 cases; Pears (1931) 54,958, (1930) 52,815 cases. The following is a statement of the 1931 distribution:—

United Kingdom 772,948 cases, Continent 431,234, South America 45,993, Canada 16,993. The exports to South America in 1930 amounted to 157,000 cases. The shipments to South America were reduced this year owing to the unfavorable market in that country owing to the depressed trading conditions and the fact that the South American Government, for financial reasons, had imposed a duty of 3/- per case on New Zealand Apples. The temporary loss of this market has made it necessary for New Zealand to send larger quantities than previously to Continental markets. Delicious Apples were shipped to Eastern Canada and arrived in excellent condition. Jonathans were affected with internal breakdown, due, it is thought, to conditions on board ship more than to any inherent defect of the fruit.

ARE YOU WINNING YOUR BATTLE AGAINST INSECT PESTS?

Shell Spraying Oils are available for immediate delivery to assist you. Growers everywhere are experiencing success with these high-quality sprays against the troublesome thrip and other insects.

Order your supply now and ensure healthier trees and a better crop.

SHELL SPRAYING OILS

THE SHELL COMPANY LIMITED

5D.13

HASTINGS COOL STORE.

The annual meeting of the Hastings and District Cooperative Cool Stores Ltd. was held at Hastings on October 3, Mr. J. M. Watt presiding.

The balance-sheet revealed a satisfactory state of affairs. Assets were shown at £14,840 (including buildings, machinery, and plant, £14,472), the principal liability being £7,287 due to State Treasurer. The sum of £1,089 was paid to the State Treasury during the year.

The retiring directors were re-elected, the members of the board being Messrs. J. M. Watt, J. D. Carpenter, A. Edwards, J. R. Boulter, S. Orsino, Junr., Fred. Unthank, D. J. Chapman, and Alex. Hodgins. The Secretary is Mr. G. H. Sprague.

* * * * *

Among the visitors were Messrs. J. M. Ward (Superintendent of Horticulture), C. M. Griffeth (President Victorian Fruit Marketing Association), H. G. Colombie, G. W. Brown, W. P. Hutchinson, A. S. M. Harrison, and R. E. Boardman.

Mr. Griffeth recounted the valuable work accomplished by the V.F.M.A. during the year. Mr. Colombie pointed out that in strengthening the Victorian Association the Australian organisation was benefited: he foresaw the time when it would be necessary to have an organisation on the lines of the International Apple Shippers' Association. Mr. Brown said the businesslike operations of the V.F.M.A. was appreciated by growers. One of the most important actitivies of the newly-formed Australian Apple and Pear Export Council was the proposal to form an Overseas Committee to attend to the importation of Australian fruit.

Mr. Ward gave seasonable advice for the control of codlin moth and thrips. The addition of white oil to arsenate of lead was of value. Growers would do well to wash Apples in a weak solution of hydrochloric acid to remove spray residue.

Mr. J. M. Watt subsequently entertained the visitors at supper, and was cordially thanked.

Somerville.—Mr. W. P. Hutchinson states that Plums are very light—practical failure because of thrips. The early bloom of Jonathan appears to have set nicely. Later bloom infested with thrips: further reports awaited.

MUCKLEFORD GROWERS JOIN V.F.M.A.

Mr. F. Cave, fruit merchant and exporter, who is a member of the Executive of the Victorian Fruit Marketing Association, visited Muckleford, near Castlemaine, in company with the Secretary (Mr. R. E. Boardman).

It was a pleasure to notice the keen interest displayed by the growers in their cultural operations and also their interest in the affairs of the industry as a whole.

All the local growers joined the Victorian Fruit Marketing Association.

Quantong.—Mr. S. Jost, Junr., reports as follows on October 17:—Crop prospects are as follows:—Apples.—Thrips very bad. Doubtful—perhaps medium crop. Pears.—Good. Peaches.—Early, light; late very medium. Prunes.—Light. Tomatoes.—Peamite troublesome—growers forced to replant in many cases, but probably good crop, mostly late.

POTASH FOR QUALITY

Science proves
What EVERY GROWER KNOWS

Every orchardist knows the reputation of the Long Ashton (England) Fruit Research Station. Read what Long Ashton says:—

"Apples from Potash-treated trees ripen beautifully, while Potash-starved fruit remains green."

"Potash increases an apple's life and resistance in cold storage."

"Manuring heavily with Potash, the result was A PERFECT EATING APPLE."

POTASH increases quantity, too, but quality is the factor that pays in the orchard.

Muriate and Sulphate of Potash obtainable from all fertiliser merchants.

If you have any manurial problems, drop a note to Department A, at the address below for an honest opinion by men of scientific and practical experience.

Pacific Potash Ltd., (Australian Office) 711 O'Brien House, Young Street, Sydney.

DON'T DELAY

If you are interested in more profits from your fruit pack, send us your request for a sketch and full information regarding Labels for the approaching Apple Season.

Let Us Have Your Enquiry Now.

It is not too early to have a design prepared so that your Labels will be ready to hand when packing commences.

Labels do help to make for better prices.

Two of our Customers write as follows:—

"The Labels are just the thing and have improved the sale of Grapes considerably.

"The Labelled Cases forwarded to the markets realised 1/- per case higher than those sent without Labels. I am sure that the same results will follow with the Orange Labels, etc."

Yours faithfully, (Signed)

"I am finding that my fruit, packed under the Label, is bringing top prices on all markets. I am now more than ever convinced that if one has good fruit it is essential to put it up in an attractive manner."

Yours faithfully,
(Signed)

When the Best Labels are a very profitable investment and not an expense, why not use the best Labels.

Good Fruit, Good Grading, Good Packing

. . and . .

A GOOD LABEL

MASON, FIRTH & McCUTCHEON Pty. Ltd.

Leading Label Designers and Colour Printers

505-9 LITTLE COLLINS STREET,——MELBOURNE, C.1.

Established 1853

Whose designs and quality are getting results

Tobacco Culture.

TREATMENT OF SOIL WITH ELECTRICITY.

Some interesting tests regarding the treatment of soil for growing tobacco seedlings are being conducted by the Electricity Commission at the seed beds of Mr. T. H. Brunn, Murrumbeena (Vic.).

Seven seed frames are being electrically controlled, some with sand insulation, others with coke. Various time meters have been installed, using power at night only, when power is available at a cheaper rate. One bed will be thermostatically controlled—check beds have been planted at the same time, and records are being kept as to date of germination, temperature, amount of water used as compared with those beds not electrically controlled. The main objects of the tests are:—

(1) To control blue mould and ascertain if seedlings in the treated beds can be raised in a shorter period than otherwise, thus reducing the danger period for blue mould infestation.

(2) By control of temperature, if blue mould can be eliminated altogether.

(3) If blue mould does appear—if by raising the temperature of the soil to a certain height it can be killed.

Dr. Dixon, Director of the Australian Tobacco Investigation Committee, has stated that it is possible to control blue mould by raising the soil temperature.

Mr. Brunn is also conducting experiments at his nursery at Frankston with a specially prepared dusting powder with a view to controlling blue mould in the seedbeds and field.

PERSONAL.

Mr. Temple Smith, formerly Commonwealth Tobacco Expert, is making a success of tobacco cultivation at Pomonal. Mr. Smith has adopted the Malcolm Moore equipment for his plantation.

TOBACCO MANUFACTURE AT BENDIGO.

Mr. Amos B. Vanhelt, representative of the English and American tobacco-growing and manufacturing industries visited Bendigo during October, and it is anticipated as a result of his survey, that plans are being made for the manufacture of tobacco, cigars and cigarettes from a factory in Bendigo.

ONE BRAND OF AUSTRALIAN TOBACCO.

The Australian tobacco manufacturers have arrived at the decision that in the near future only one brand of locally raised tobacco will be retailed. There will be light and dark varieties, but only one brand.

It is anticipated that the change over will tend to the stabilisation of the industry and ensure better prices for the growers, reduce overhead expenses in the manufacture of the leaf, and bring about the presentation of a more attractive article to the public.

TOBACCO GROWING IN VICTORIA.

Over 1,000 Victorian tobacco growers are already registered with the Customs and Excise Office, and it is probable that this figure will be increased before the season closes.

The Better Farming Train devoted a section to tobacco culture. Visits were made to Cohuna, Gunbower, Dinge Kerang, Mildura, Swan Hill, Pyramid and Lockington.

Mr. William Pan Look has 250 acres under tobacco at Eurobin, Victoria. His special method of curing is successful. Recently the Parliamentary Tobacco Investigation Committee paid a visit to Mr. Pan Look's plantation.

In adidtion, Mr. Pan Look grows hops in very large quantities. During the hop-picking season there are 700 employees at work.

Recently the residents of the Eurobin district presented Mr. Pan Look with an illuminated address in appreciation of his services to the district.

PRESENTS TO FRIENDS IN GREAT BRITAIN.

People in Australia have a unique opportunity of sending presents to friends in Great Britain. You can send butter, dried and canned fruit, jam, wine, carcases of lamb, etc. Full particulars are obtainable from the Department of Agriculture, Melbourne.

OBITUARY.

Mr. Henry Schwieger, Manager of the Royal Agricultural Society, died on October 8, after an illness following his collapse at the recent Royal Agricultural Show. The late Mr. Schwieger was a capable organiser, and the success of the Royal Agricultural Society is largely due to his efforts. About 5,000 persons attended the funeral. At the graveside a Masonic service was conducted.

A GREAT AUSTRALIAN.

This country, and the world at large, has lost a valued citizen in the passing of Sir John Monash, late Commander-in-Chief of the Australian Army and Chairman of the State Electricity Commission of Victoria. In peace as well as in war Sir John was an outstanding figure. His broad culture and wide human sympathies endeared him to all. He was a true patriot, a warm-hearted friend, and ever a guide and counsellor, in particular to returned soldiers. He has left an inspiring example of unselfish devotion.

TOBACCO SEEDLINGS FOR SALE

Grown on Virgin Sand in New District

Enquire—

Pine Tobacco Co. Pty. Ltd.

Merrigum - - - - Victoria.

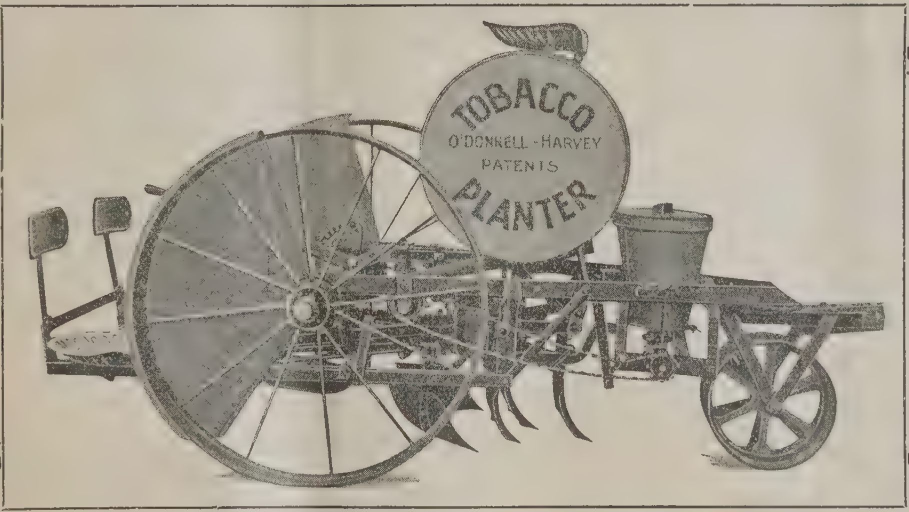
TOBACCO SEEDLINGS

In addition to being, probably, the largest growers of light leaf Tobacco seedlings, we claim to have spent more than any other Grower in trying to protect our Nurseries from disease and in experimental work.

Our three Nurseries, situated 30 miles apart, have a capacity of well over 4,000,000 plants The varieties grown are Conqueror, Adcock, Warne, Hickory Pryor and Yellow Pryor. Prices range from 17/6 per 1,000, according to quantity Book your order now, and save disappointment.

BRUNN'S DIRECT SEED SUPPLY CO.,
82 Swanston Street, Melbourne.
Quote "Fruit World," Nov.

Tobacco Growers!



Here's the Machine that does 5 Jobs in One Operation

"Harvey" Planters are sold with or without the manure distributor, cultivating and hilling attachments. Any of these attachments can be procured at any time, as required.

1. *It* broadcasts the manure over a wide 15-inch strip.

2. *It* has a tyne cultivator which lifts the deep, cool, and moist earth beneath the surface, thoroughly mixing manure with cultivated soil.

3. *It* is equipped with Hillers which form the freshly cultivated soil into a continuous mound.

4. *It* operates a parting tool which opens and parts the soil into a deep, narrow furrow to receive the plant.

5. *It* closes the furrow by pressure plates, compacts the soil downwardly and inwardly, tightly and snugly around each plant, at the same time pulling a covering of fresh soil around the plant roots, forming an effective mulch. The precise moment for inserting the plant is indicated by a jet of water discharged from the ejection valve, the seedling is inserted and the water straightens out the roots.

Special Announcement

We are now manufacturing two special types of Tobacco Row Cultivators, which work easier and eliminate Hand Hoeing between and around the plants.

Write for Leaflet.

Remember the Name of the **5** *in* **1** *Tobacco Planter*

HARVEY Tobacco Planter

Full Particulars from **D. HARVEY.** *Implement Manufacturer,* **Box Hill, E.11, Vic.**

AGENTS:

Victoria.—F. R. Mellor, 440 Elizabeth St., Melb.

New South Wales.—Buzacott & Co. Ltd., 7-11 Market St., Sydney.

South Australia.—Silbert, Sharp & Bishop Ltd., 283 Rundle St., Adelaide.

Tasmania.—Max Geeves Pty. Ltd., 4 Davey St., Hobart.
R. D. Hassell Pty. Ltd., 31 St. John St., Launceston.

Queensland.—Buzacott's (Queensland) Ltd., Adelaide St., Brisbane.

West Australia.—H. J. Wigmore & Co., 613 Wellington St., Perth.

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

Sydney: **NEW SOUTH WALES.**
Chilton, F., City Fruit Markets.

Melbourne: **VICTORIA.**
Cave, F., & Co., Melbourne.
Davis, J., Pty. Ltd., Wholesale Fruit Market.
Millis, A., & Sons, Wholesale Fruit Market.
Lister, G., Wholesale Fruit Market.
McLean, N. N., Pty. Ltd.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Wholesale Fruit Market.
Renouf, R., Wholesale Fruit Market.
Ross, J. W., Wholesale Fruit Market.
Silbert, Sharp & Davies, Wholesale Fruit Market.
Stott & Son, T., Wholesale Fruit Market.
Tim Young & Co. Pty. Ltd., Wholesale Fruit Market.
Vear, F. W., 49 William Street.
Wilson, H., Wholesale Fruit Market.
Woolf, G., Wholesale Fruit Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Wholesale Fruit Market.

Brisbane: **QUEENSLAND.**
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

Hobart: **TASMANIA.**
E. R. Cottier Pty. Ltd., Temple Place, Macquarie Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

Dunedin: **NEW ZEALAND.**
Co-operative Fruitgrowers of Otago Ltd.

London: **GREAT BRITAIN.**
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
The Port of Hull, London and N.E. Railway. Rep., Burns, Philp & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
Johnson, T. S., & Co.

Bremen: **GERMANY.**
Fruchthandel, Gesellschaft.

Hamburg:
Astheimer, P. H., & Son, Fruchthof.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof.
Timm & Gerstenkorn.

DENMARK.
Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.

New South Wales.

Sydney (23/10/31).—Apples, local, eating, Del. 7/- to 13/-, few 16/-; G. Smiths 8/- to 14/-, few 16/-; Rome Beauties 8/- to 12/-; Tas. Demos. 7/- to 11/-; Croftons 7/- to 11/-; Scarlets 5/- to 9/-, few 10/-; F.C., green, 7/- to 10/-; Sturmers 5/- to 7/6, other varieties 3/- to 7/-; Vic. Yates, 8/- to 13/- bush. case. Bananas (genuine grades), nines and eights 17/- to 20/-, few 21/-; sevens 13/- to 16/-; sixes 9/- to 12/- case; Citrus fruits: Lemons, local, choice 4/- to 5/-; medium 3/-; small or inferior, 2/-; irrigation 4/- to 7/-; Oranges, Common, 3/- to 5/-; special to 6/-; Valencias 4/- to 6/-; Navels 4/- to 10/-; irrigation 4/- to 8/-; Mandarins, Emperors, 2/- to 8/- bush. case; Grapefruit 4/- to 8/- bush. case; Loquats, Mammoth 5/- to 12/-; Commons, 3/- to 4/- half bush. case; Passionfruit, local 3/- to 13/-; few 14/- half bush. case; Papaws 7/- to 15/- case; Pears, Tas. Winter Coles, W. Nelis and Jos. 6/- to 11/-; Vic. 6/- to 14/- bush. case; Pineapples, 5/- to 9/-, few 10/- case; Tomatoes (Qld.) 5/- to 10/-, repacked to 14/-; local, hothouse, to 18/- half bush. case.

Queensland.

Brisbane (23/10/31).—Vic. Apples of the Yates class, 12/- to 14/- case; Pears of the W.N. class, 13/- to 16/- case; B.P., from 10/- to 13/-; M.C., 9/- to 13/-; Grapefruit, 2/6 to 3/6 case; Tas. Apples: Demos., 10/- to 12/-; S.P.M., 6/- to 10/6; S.T.P., 5/- to 10/-; F.C., green, 8/- to 10/6, pale 5/- to 7/6; Rokes, 9/- to 12/-; Queensland Navel Oranges, second crop, 5/- to 8/- case; Qld. Oranges, large size and good color, 5/- to 7/- case; special, 8/6 to 10/-; second crop and inferior, 3/- to 4/-; Lemons, 2/- to 4/- half case; smooth-leaf Pines of large size, 4/- to 5/6 case; special, 6/-; Ripley Pines, 8/- to 12/- case; Passionfruit, first grade, 10/- to 12/-; second grade, 4/- to 6/-; Papaws, local, special, 4/6 to 6/- per Orange case; inferior, 3/- to 3/6 case; Yarwun, 9/- to 12/-.

Victoria.

Melbourne (22/10/31).—The following prices are supplied by the Wholesale Fruit Merchants' Association of Victoria:—Apples, cooking and eating, 4/- to 8/-, some special (eating) higher. Bananas, green, Queensland, 9's and 8's, 14/- to 15/-; 7's, 12/- to 14/-; 6's, 9/- to 12/- double case; selected fruit for country trade higher; rust affected lines lower. Grapefruit, 8/- to 11/-, special

FRUIT TREES

ONE GROWER SAYS—
"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—
John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

higher. Lemons, 3/- to 5/-. Navel Oranges, 4/- to 8/-, special higher; Common Oranges, 4/- to 7/-. Pineapples, 7/- to 9/- per double case, a few 10/-. Passionfruit, 13/- half case, few specials higher. Tomatoes, South Australian, to 22/-, few ripe to 23/-; West Australian, repacked (ripe), to 16/- per half case; few higher. Cucumbers, Queensland, to 16/-; few higher. Papaws, to 13/- per double case.

The Melbourne manager of the Federal Citrus Council of Australia reports that sales were as follow:—Navel Oranges, average standard, unwrapped, Victorian, 60-68, 5/-; 75-96, 6/-; 112 up, 7/-, with odd sales to 8/-; faulty lines, lower; selected unwrapped, 6/-, 7/-, 8/- and 9/-; few selected wrapped lines, including South Australian, 7/-, 8/-, 9/- and 10/-, with odd sales to 11/-, and a few picked counts at 12/-. Lemons, 3/- to 5/-; specials, 6/-. Grapefruit, plains, to 9/-; good standards, large, to 10/-; medium, to 15/-; a few selected Curlwaa lines higher. Mandarins, average quality, best counts, few to 5/-; small, dry or puffy lines, unsaleable; few specials to 7/- and 8/-. Common Oranges, 4/- to 7/-; good bloods and specials higher. Valencias, a few Milduras to 8/-; a few wrapped to 9/-.

VALENCIA ORANGES.

The Melbourne Market Manager of the Federal Citrus Council of Australia, reports as follows regarding Valencia Oranges:—

Valencia growers, particularly those in the Mildura districts, are again reminded that while the present supply of Navels continues there will be only a very limited demand for Valencias, and that mainly for window dressing purposes. Indications are that the summer fruit crop, including Valencias will be generally light, and in the circumstances Valencia growers should endeavor to spread their consignments as much as possible over the summer and early autumn. Only those growers in districts where the fruit is likely to become rough and coarse if held on the tree after New Year should be in any haste to market before Christmas.

South Australia.

Adelaide (23/10/31).—Apples (eating) 10/- to 12/- case, (cooking) 9/- to 10/-; Bananas (Qld.), 22/- to 24/-; Lemons, 3/6 to 4/-; Oranges (Common) 4/- to 5/-, (Navel) 7/- to 9/-, (Poorman) 4/- case; Passionfruit, 40/-; Pineapples, 14/- case.

FRUIT EXPORT FROM AUSTRALIA AND NEW ZEALAND.

Substantial Figures.

THE Empire Marketing Board recently issued the final figures showing the exports of fresh fruit from Australia and New Zealand for 1931.

Australia sent to Great Britain 2,427,000 cases of Apples, compared with 3,195,000 cases in the preceding year. Exports of Apples to the Continent aggregated 718,000 cases, compared with 1,123,000 cases.

Exports of Apples from New Zealand were 755,000 cases to Great Britain, compared with 938,000 cases, and 380,000 cases to the Continent, compared with 167,000 cases in the preceding year.

To Great Britain Australia exported 321,000 cases of Pears, compared with 254,000 in the preceding year, and to the Continent 24,000 cases compared with 21,000 cases. New Zealand's exports of Pears amounted to 45,000 cases to Great Britain, compared with 43,000 cases, and 10,000 cases to the Continent, compared with 13,000 cases.

PYSECT or PESTS?

—you can't have both!

Pysect Concentrate, the original British Pyrethrum Insecticide, definitely supersedes nicotine, arsenic and the older washes. More potent than nicotine, it is non-poisonous to warm-blooded animals and harmless to vegetation —even the most tender shoots. Colour and flavour of the fruit are not affected. No effect upon bees. Trees may be sprayed in blossom.

A one-solution spray, it mixes readily with water to form a perfect emulsion.

No soft soap required

SHIELDS THE PLANT
PYSECT
DESTROYS THE PEST

Available from—
E. HOLROYD PAGE,
218 High Street,
MALVERN.

all nurserymen and Seedsmen, or direct from

J. A. GORE,
Agents for Australia,
Twyford House,
17 Castlereagh Street,
SYDNEY.

Postal Address—
Box No. 3043NN, G.P.O.,
Sydney.

Pysect
DEATH TO PLANT PESTS
CONCENTRATE
BRITISH PRODUCT
Distributors Wanted in all Districts.

RETAIL FRUITERERS' ASSOCIATION.

THE MONTHLY MEETING of the Executive of the Melbourne and Metropolitan Fruiterers' Association was held in the Temperance Hall, Russell-street, on Thursday, October 1, 1931: there was a good attendance of delegates. Amongst the correspondence was a letter from the Assistant Minister of Agriculture, stating that the scales in the departmental inspectors' office had been put in order and the inspectors would now be in a better position to enforce the provisions of the Fruit and Vegetable Packing Bill.

The Secretary stated that there had been many complaints of short-weight bags of Peas, and he hoped that now the matter would be thoroughly cleaned up.

A presentation was made during the meeting to Mr. D. Coulter, on his retiring from the Executive, after many years' service, and an address was given by Mr. J. P. Gibson on the "Eat More Fruit Campaign," on the importance of fruit, nuts, salads and vegetables as a matter of food instead of as a luxury as at present. He stated that his rejuvenation on that diet proved conclusively much benefit can be obtained by the use of more of these products of nature. After many questions had been answered by the lecturer, a vote of thanks was accorded him for his very interesting address.

It was also decided that the annual picnic be held at Sorrento, and the President, Vice-President, Treasurer, Assistant Secretary, Mr. E. King, and the Secretary were appointed as a directing committee to make all arrangements. The Secretary reported that the wages board had completed its deliberations, and the new log would come into force on the 13th inst.

Notes on the Retail Trade.

There has not been much improvement during the month in the retail trade. All vegetables are exceptionally dear —Cauliflowers have been sold as high as 14/- per dozen, and Cabbages at 9/-, so it will be realised that retailers find it very difficult to dispose of these varieties even at cost price.

Apples are also commanding higher prices, and therefore slower sales, but with improvement in the weather citrus fruits are selling better, although somewhat dearer.

Pineapples have been very cheap, but slow of sale, and Bananas are selling a little better than of late. Lemons are still a drug on the market, and probably will remain so until the hot weather sets in.

Tomatoes are arriving in fair quantities from West Australia, and are of good quality, and much improved to previous years; they are selling well, and as the price is much less than for South Australian, many people are buying them in preference to the latter.

EDW. W. THOMPSON,
Secretary, Melbourne and Metropolitan Retail Fruiterers' Association.

Malcolm Moore Ltd., makers of the Oliver plough and cultivators, have vacated their city offices in Flinders-street and have opened new offices at their works in Williamstown-road, Port Melbourne North.

Blessing Bill Ranger.

Tommy: "Mamma, look at that funny man across the street."

Mother: "What is he doing?"

Tommy: "Sitting on the footpath talking to a Banana skin."

Rockhampton

The starting point for the Great Queensland Central Railway has a population of 30,000, and offers a good market for your fruit.

ORCHARD FRUIT SUPPLIES
offer a prompt and reliable selling service. Best Prices. Prompt advices and returns.

Reference:—Australian Bank of Commerce.
'Phone: 1584.
P.O. Box. 223. Brand: ORCHARD RTON.

Consign your Fruit to—

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Telegrams: Jaegagento, London.
FRUIT IMPORTER
18 Bedford Chambers, Covent Garden
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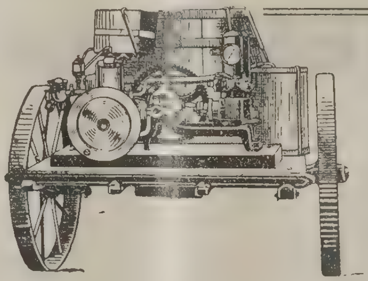
and compare the results with those of the competition.
Try and See.

AGENTS REQUIRED.



Bave-U Power Sprayer

The BAVE-U is claimed by thousands of growers to be the best and most reliable Sprayer known.

SIMPLE TO OPERATE

Machines are still in use after 30 years of continuous wear.

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ENGINEERS
BOX HILL——Victoria
N.S.W. Agents—F. H. G. ROGERS, Fruit Exchange, Sydney

VALLO

GENUINE NICOTINE SULPHATE

(Guaranteed 40%)

MADE IN AUSTRALIA

WHY GROWERS FIND THE USE OF "VALLO" PROFITABLE

(1) It is one of the oldest and strongest poison sprays known.
(2) No spray is more efficacious than "Vallo" Nicotine Sulphate for the control of aphis and similar pests.
(3) It is remarkably economical.
(4) Its two-fold action rapidly kills all insect pests—it destroys by contact and fumes.
(5) All State Departments of Agriculture recommend its use.

PRICES ARE COMPETITIVE

Tins:	10 lb.	5 lb.	2 lb.	1 lb.	½ lb.
	53/-	29/6	16/-	10/-	6/- per tin

F.O.R. Main Australian Ports, plus Sales Tax

Manufacturers . . .

VICTOR LEGGO & FARMERS LTD

Agents all States • 218-222 QUEEN STREET, MELBOURNE

Doncaster.—Mr. Claude Bull, Secretary Doncaster Fruitgrowers' Association, writes as follows, under date October 19:—

From enquiries I have made in the district and from my own observations, the indications are that the Pear crop will be on the light side. One well-known grower estimates it at a two-thirds crop.

Williams, which bloomed well, appear to be setting, but B. Bosc, W. Cole, W. Nelis, and Josephine are light, and Packhams medium; B. Park, good.

It is rather early to estimate the Apple crop, but as thrips are still very active, the prospects are rather gloomy. Many growers have been spraying to kill thrips, although not very enthusiastically. It will be interesting to get their opinions later.

Peaches, which are extensively grown, show a medium crop, but many of the trees have been badly affected by the wet, and are not developing. Cutting back severely now may possibly save the trees if they are not too far gone.

Black spot is making its appearance, and many growers are combining lime-sulphur or bluestone with their arsenical spray.

With reference to thrips, it is noticeable that where there is a heavy crop of Capeweed, the thrips appear to prefer the flowers to the fruit blossoms. They literally swarm on the Capeweed flowers, and are only light on the blossoms.

Ardmona.—At the annual meeting of the Ardmona Fruitgrowers' Association the officers elected were:—President, Mr. W. Young; Vice-Presidents, Messrs. H. E. Pickworth and W. J. Pearson; Secretary, Mr. S. P. Cornish; Committee, and Delegates to Northern Association, Messrs. J. D. Simson, P. A. Pyke, J. Pearson. A defence committee was also appointed.

SOUTHERN FRUITGROWERS' ASSOCIATION.

A meeting of the Executive of the above Association was held at Box Hill on October 1. There were present Mr. L. Pepperell (President), Messrs. W. A. Thiele, W. A. Webb, O. White, A. Leber, G. Fankhauser, and the Secretary (Mr. J. W. Aspinall).

A letter was received from the E. Burwood Fruitgrowers, forwarding copy of a resolution carried at their meeting, expressing the opinion that Pears for export were packed too tightly. The Superintendent had replied stating that if the growers found they packed their fruit too tightly, this should be remedied amongst themselves.

Messrs. Lawford's Fruit Exchange wrote, stating that they were withdrawing "Fluxit" from the official tests being carried out at the orchards of Messrs. W. A. Thiele and H. Petty for the control of codlin moth, but stating they were willing to submit to any tests asked by growers on the merits of Fluxit. This letter was forwarded to Mr. J. M. Ward, who replied, stating that it was not proposed to take any more tests.

A lengthy discussion took place, in which members objected to wholesalers occupying stands in the Victoria Market for the sale of fruit in the growers' portion. It was resolved that the Secretary interview the market officials to endeavor to safeguard growers' interests.

THINNING APRICOTS.

Where heavy crops of Apricots are showing, thinning is desirable, thus improving the quality of the fruit.

Thinning also reduces the strain on the trees, and the quantity of plant food removed from the soil is lessened considerably.

The Most Important Test

Poultry-Keeper Satisfied Karswood Increases EGG Production.

MR. TAPP, in his letter below, describes how he divided 12 pullets that had not laid into two pens of six. To one lot he fed Karswood in the mash, and to the other lot be didn't. The lot that received Karswood laid five weeks before the lot that hadn't. That was good enough for Mr. Tapp. It was the first and last test. After that he fed Karswood regularly to all his fowls, and he says that it has doubled his egg production. You can obtain these results, too. Buy a packet and test it yourself. A ½ lb. packet costs only 1/-, and contains enough for 20 birds for 16 days.

"Doubled Egg Production."

Dear Sir,

I have got a lot of fowls, and this season I am doubling my number. For the past two years I have been a user of Karswood Spice and can honestly say that I have doubled my egg production. I may state that when your Karswood Poultry Spice first came under my notice I gave it what I consider a hard test, viz., I had 12 pullets that had not laid. They were the same age. I yarded six and fed them with wet mash (pollard) and wheat and Karswood Poultry Spice. These six laid five weeks before the other six that were fed on wet mash (pollard) and wheat without Karswood Poultry Spice, thus proving without doubt the benefit of Karswood Poultry Spice. This I have mentioned to my friends on various occasions here.

(Sgd.) W. H. TAPP,
1/5/29 St. Mary's, East Coast, Tasmania.

"Of Great Value to the Fowls."

I think Karswood is of great value to the fowls. They always seem to be in good trim when fed on it. I never lose any fowls through any sickness what ever, and always get a good percentage of eggs
9/6/29 (Sgd.) H. H. BISHOP, Koorawatha.

MAKE THIS TEST.

Go to your local grocer, storekeeper or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a-dozen of your birds in accordance with the directions on the packet. Do not expect immediate results—Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

SUPPLIES.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½ lb. packet, price 1/-; 1 lb. packet, price 2/-; 7 lb. tin, price 13/-; 14 lb. tin, price 25/-; 28 lb. tin, price 48/-

KARSWOOD
POULTRY SPICE
INCREASES EGG-PRODUCTION WITHOUT FORCING

Poultry Notes

Quality in Eggs.

Special Care Necessary During Summer Months.

DURING the warmer months of the year special care is necessary if only eggs of high quality are to leave the farm. Following are some important points in this connection, supplied by the N.S.W. Government Poultry Expert.

One of the initial factors which has an influence upon quality is the feeding of the birds. Any excess of stimulating condiments or forcing foods is likely to result in blood spots or blood streaks in the eggs, which cause them to deteriorate rapidly. On the other hand, a ration lacking in the essentials for proper nutrition will not produce good eggs.

Next comes the nesting and housing conditions. If the nests are placed in a position where they are liable to get wet, or if they are allowed to become insanitary, the eggs will be soiled. Where the floors of houses are not concreted and they get wet during rainy weather, or where they are not kept reasonably clean, the result is the same.

Care is also necessary when collecting the eggs during wet weather to keep them dry, and this can best be done by having a covering over the collecting tin or basket.

Care in Storage.

The storage of eggs after collection is an important matter, and it is here that much harm is done to the quality of eggs on many farms. If they are allowed to stand in the receptacles in which they have been collected, exposed to draughts for a day or so before packing, and, when packed, allowed to remain in a hot room, the air cells will become enlarged, especially in the case of those eggs which are on top.

Instances have come under notice where eggs have been placed under a raised building in the summer time with the object of keeping them cool. Under such conditions the outside eggs, being exposed to the drying winds, quickly become enlarged in the air cells and deteriorate in quality. The room in which eggs are kept should be as cool as possible and free from undue draughts, and the eggs should be packed into the cases as soon as practicable.

In the hottest weather it is a good practice to cover the cases with a sheet after packing, and on no account should they be placed out in the sun awaiting the carrier, nor should carelessness on the part of the carrier in neglecting to keep the eggs covered be tolerated.

Handling of Broody Hens.

Broody hens sitting on the eggs is a frequent cause of bad eggs, and for this reason it is best to collect the eggs twice daily during the summer time, but at the same time a proper system of handling the broody hens is necessary. A most effective method of coping with this problem is to have a slatted crate with several divisions, so that each night's broodies can be placed in a separate compartment. If a practice is made of catching all the hens as soon as they show signs of broodiness and placing them in the crate, they will be "off the brood" again in three or four days, but when they are allowed to remain on the nests for a couple of days it takes much longer and results in loss of production.

C. P. Keys' Barred Plymouth Rock Cockerel — Best Heavy Breed at Essendon Show and winner of other specials at this seasons Shows.

INDIAN RUNNERS AND EGG PRODUCTION.

Question:

"F.S." (Woori Yallock), writes:

How long do Indian Runner ducks remain profitable egg producers?

Answer:

With few exceptions it is not profitable to keep poultry of any breed for egg production after the second season. In special cases where ducks have recorded exceptionally good figures in their first two years' laying, it may prove profitable to retain them over the third year.

DORKINGS WANTED.

Question:

"J.P." (Waaia) writes:

Could you tell me, through your valuable paper, a breeder of white Dorkings, also which of the Dorkings are the largest?

Answer:

White Dorkings are a very little known variety of this fine old table breed, and I know of no one breeding them out here. For table purposes, however, the other varieties of Dorkings are just as satisfactory, the Silver Grey being the most popular in Australia. It has also been bred to a greater size than any other variety. There is no breeder advertising Dorkings in our columns, but Mr. J. F. Cooper, of "Agherton," Centre Dandenong-road, Cheltenham, Victoria, who is one of our regular advertisers, has been exhibiting some Dorkings in Melbourne recently, and may be able to supply your requirements. I would advise you to get in touch with him, mentioning the "Poultry World."

TOBACCO INDUSTRY.

Useful Machinery.

A new tobacco planter has been manufactured by Mr. D. Harvey, of Box Hill, Vic., which does manuring, cultivating, hilling, watering and planting in one operation. First the machine broadcasts the manure over a 15-inch strip, then a tyne cultivator lifts the earth beneath the surface, thoroughly mixing manure with cultivated soil. The hillers with which the machine is equipped, form the soil into a continuous mound. A parting tool then opens and parts the soil into a deep, narrow furrow to receive the plant. The furrow is next closed by pressure plates, pressing the soil firmly around each plant, at the same time pulling a covering of fresh soil around the plant roots. The moment for inserting the plant is indicated by a jet of water discharged from the ejection valve, the seedling is inserted and the water straightens out the roots.

A New Cultivator.

Mr. Harvey is now manufacturing a new tobacco row cultivator for working the soil in between and around each plant, irrespective of the height or age of the plant, at the same time cultivating the whole of the land between each row. This machine will work right up to the stem of the plants without touching or injuring the leaves or roots.

One man and one horse is all that is necessary for this cultivator, which will do the same amount of work as efficiently as ten or more men with hand hoes. The machine automatically frees itself of all weeds and rubbish after cultivating around each plant. Constant cultivation is essential to successful tobacco growing, and this money-saver enables the grower to cultivate more frequently than it is possible by the old expensive method of hand hoeing.

New Export Case.

No Nails Used.

A new type of case for the packing of fruit, eggs and butter, which is expected to become very popular with exporters of the above-mentioned commodities, has been designed and made in Melbourne recently. The case is already being used by Messrs. W. Angliss Pty. Ltd. for the export of eggs to England, and the results of this shipment will be awaited with keen interest by those exporters who are competing in the egg export trade. The case is made of lighter material than is used in the ordinary run of boxes, and is bound on all sides by a strip of metal that fastens by means of teeth into the wood, with a special clamp for the lid. The box used for eggs holds the usual 30 dozen, but takes up less cargo space than the usual export case, and it is stated by the company that the saving in freight for eggs to London is about 9d. per case.

Not one nail is used in the making of the case, which is being turned out by a machine manufactured at the works of W. Wakefield, engineers, Judd-street, Richmond.

Experiments extending over a number of years were carried out before the machine was perfected.

The new case, which is being made in both soft and hardwoods, is cheaper to construct than ordinary cases, besides saving freight when used for export.

MR. J. W. BARKER RETURNS.

Mr. J. W. Barker, of Barker, Green & Parke Pty. Ltd., Melbourne, recently returned from a business visit to Great Britain, Europe and America. Whilst in Europe he availed himself of the opportunity of inspecting several consignments of Australian Apples which were being sold, and found that the quality, with the exception of 3 in. Jonathans and Delicious, were very fine.

The trouble with the large Jonathans and Delicious Apples was that after 3 or 4 days, on being removed from the ship's hold they went black and showed a general breakdown. This was the cause of many complaints being made in regard to the condition of the larger fruit. As a result of this, some of the large merchants were indicating that they would seriously consider restricting their purchases for smaller sizes of these varieties of Apples.

"It was my privilege to explain to them," states Mr. Barker, "that the cause of the trouble, in my opinion, was the excessive wet season during the growing period and the light crop, and that I felt sure with normal conditions and a heavy crop that the larger Apples would be quite a safe proposition. Other Victorian fruits such as Cleos., Dunns, Granny Smiths and Stone Pippins, were in excellent condition."

Mr. Barker agreed with the comments recently made by the Victorian Trade Commissioner regarding the excellent condition of some of the fruit sent from the Rheola and Bendigo district. He also wished to pay a compliment to the quality and general appearance this season of the Tasmanian Apples. It was in his opinion the finest Tasmanian fruit he had seen on the overseas markets, and the improvement on previous years' fruit was most marked and many buyers commented favorably on the condition, particularly varieties such as Scarlets, Democrats, Cleos., Dunns and Jonathans.

He noticed that the London market held up much better than the Continental markets, and ascribed this fact to the supply of early fruits in greater quantities on the Continental markets than on the London market, and also to the competition of American Winesaps, which were selling in competition with our Australian fruit. Although these Apples had been cold-stored for some considerable time and weren't equal in quality to our Australian fruit, they had a good appearance, which helped to sell them.

He does not think that the overseas markets have nearly reached their absorption point, especially for good fruits of the grades required for the several markets.

Speaking of Pears, Mr. Barker stated that Australian Pears met with an excellent reception, and he anticipates greater competition in future for same. Josephines, Beurre Bosc, and Winter Nelis, particularly those from the Harcourt, Elphinstone, and Bendigo districts, arrived in excellent condition, and were very favorably commented upon by several of the largest buyers in the U.K. He also saw American Williams Pears in good condition, and in his opinion there was no comparison between these and our Australian Pears of the varieties stated. They were insipid to the taste.

The position in Hamburg was quite good, although the prices on the later boats suffered by comparison with the London market.

On his way back Mr. Barker visited Canada and the U.S.A., and had the opportunity at Vancouver of seeing Navel Oranges from Griffith Produce Co-operation Ltd. under the brand of "Gems of Gold" sold at a very good price. Oranges from the s.s. "Niagara," which had arrived in Vancouver on July 17, were realising up to 4 dollars 75 cents per bushel and a quarter case. These were being largely advertised by the trade, and were a very good quality. To further test the carrying capacity of these Oranges he brought a number back in his luggage and ate them when he arrived in Sydney Harbour, and they were still in excellent condition. He considers that the trade treaty with Canada will considerably assist the citrus industry, also the dried and canned fruits.

Canadian business men whom he met all seem to be very keen to establish trade with Australia. In regard to Apples, he is not optimistic, as Canada can hold their own Apples in cool store, and thus provide wholly for their own consumption.

Mr. Barker took the opportunity whilst in New York of inspecting the new Empire State Building. This is the highest building in the world, containing 102 floors.

It is necessary to use three sets of lifts to reach the top of the building. On the top of this building is a very fine cafe. A huge searchlight has been erected on the top, also a tower. This it is hoped to use for a mooring mast for "lighter than air" machines which are now being used largely in America. From the ground to the top of the tower the building is 1,248 feet high.

TASMANIA.

Huonville.—Mr. D. F. Calvert reports, under date October 12:—It is too early to make any forecast yet as to what the crops will be. There is generally a heavy blossom. The weather has been very rough lately, and we now want some fine weather to ensure a good setting. The main varieties in this district are Sturmers, Cleopatra, Scarlets, Democrats, Jonathans, French Crabs.

TASMANIA
Leading Australian Firm of Fresh Fruit Exporters.
Manufacturers IXL Jam and Canned Fruits.
Hop Factors—Largest Cool Stores for Hop Storage in Commonwealth.
All Orchard Supplies available at all times.
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MELBOURNE.

"Fruit World Annual"
Comprehensive review of Australian and New Zealand fruit industry.
"The Fruit World," Box 1944 G.P.O., Melbourne.

The area under Bananas in Queensland is now nearing 20,000 acres.

It is estimated that the 1931 crop of Oranges in N.S.W. will total 3,000,000 cases.

The Two Bays Nurseries & Orchard Company Pty. Ltd., Moorooduc, Vic., are stated to be the largest combined citrus and deciduous fruit tree growers in the Southern Hemisphere. Their nurseries comprise 200 acres, and their orchards 500 acres.

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FRUIT SHIPMENTS FOR SYDNEY AND QUEENSLAND PORTS SPECIALLY CATERED FOR.

Regular weekly service of **Fast, Modern, Passenger Steamers,** fitted with ventilated 'tween decks and Refrigerator Chambers.

By special arrangement Fruit, etc., for Sydney, leaving Melbourne Noon Saturdays, is delivered on Sydney Wharf **6 a.m. Mondays,** ready for early morning market.

Fruit for **Brisbane,** leaving Melbourne Noon Saturdays, delivered Brisbane Wharf **8 a.m. Thursdays.** SPECIAL REDUCED RATES OF FREIGHT.

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Howard Smith Ltd., Managing Agents, 35 Market Street, Melbourne, C.1. Tel. Cent. 8314.

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MacDonald, Hamilton and Co., Managing Agents, 467 Collins Street, Melbourne, C.1. Tel. Cent. 9708.

ADELAIDE STEAMSHIP CO. LTD.,
505 Collins Street, Melbourne, C.1. Tel. Cent. 475.

HUDDART PARKER LTD.,
466 Collins Street, Melbourne, C.1. Tel. Cent. 8960.

McILWRAITH McEACHARN LTD.,
94 William Street, Melbourne, C.1. Tel. Cent. 9440.

MELBOURNE STEAMSHIP CO. LTD.,
31 King Street, Melbourne, C.1. Tel. Cent. 8693.

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Over 30 Years Experience
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Fruit Exchange, Brisbane
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Personal supervision of every consignment.

Cheques posted promptly.

Drop us a Line or Cable "Peachbloom," Dunedin.

VEGETABLE CULTURE.

WHERE THE GROUND is of a very light, porous nature, on which crops suffer badly during dry weather, it is necessary that something be done to bring the ground into better condition so that it will be firmer and more compact of texture, and thus retain the moisture more completely.

A very good way of dealing with very light ground, is on the following lines. Dig a trench from 6 to 10 inches deep, according to whether shallow or deep rooting plants are to be grown. Two feet is a suitable width, and the soil which is removed should be wheeled to the other end of the plot and kept for filling up the last trench. In the trench thus exposed spread a thick layer of moist cow or pig manure, soft vegetable refuse, or anything that will form a damp mass for binding the loose soil together. About a barrow load to every six yards or eight yards of trench should be allowed. Dig in this material well, not merely burying it, but working it uniformly into the subsoil and finally tramping it down to consolidate the mass. Open up another trench similar to and alongside the first, putting the soil on the top of the subsoil already treated in the first trench. Repeat the operation described with the second trench and continue the process until the whole of the land has been treated.

(Continued on next page)

"Black Leaf 40"
NICOTINE SULPHATE
POISON
Active Ingredient, Nicotine 40%
Inert Ingredients, 60%
TOBACCO BY-PRODUCTS & CHEMICAL CORP., INCORPORATED
Louisville, Ky.
MAKES 6 GALLONS OF SPRAY

"Black Leaf 40" Death to Aphis (Plant Lice) and Other Insects

Aphis and other insects are common enemies of the orchardist and gardener. Protect your trees, vines and plants with "Black Leaf 40."

In the Orchard and Garden

"Black Leaf 40" is recommended for killing wooly aphis, apple aphis, peach aphis, aphis on roses, other flowers and vegetables, mussel scale (young), Harlequin fruit bug, holy or cross bug, oleander scale (young), San Jose scale (young), red scale (young), red mites (Summer), rutherglen bug, pear and cherry slug, thrip, fine scale (young), pea mite.

In the Poultry Yard

Paint the roosts lightly with "Black Leaf 40" just before the birds go to roost. Body-lice will be destroyed while the flock roosts. To help prevent mites from attacking fowls, tie or tack a piece of heavy cloth around ends of roosts and roost supports and saturate with "Black Leaf 40;" spray inside of house with "Black Leaf 40," three tablespoonsful to a gallon of water to which soap has been added.

"Black Leaf 40" has the endorsement of Agricultural Colleges, Experiment stations and orchardists. It is the World's leading aphis specific. It also kills the young larvae of many chewing insects when sprayed upon them so as to wet their bodies.

Kills By Contact and By Fumes

"Black Leaf 40" has a dual action. It kills plant insects both by fumes and by contact. This double-killing action makes "Black Leaf 40" unusually effective in insect control.

Paint Roosts . . . Kill Poultry Lice

Poultrymen find that if they paint the roosts lightly with "Black Leaf 40" the lice on the birds are killed. The heat from the birds' bodies releases fumes which destroy lice, as the flock roosts on perches.

Genuine "Black Leaf 40"

"Black Leaf 40" is registered by us in Australia and New Zealand as a Trade-Mark and Brand. Users are familiar with the red labelled packages and the black leaf design prominently displayed thereon. Beware of imitations. Insist upon genuine "Black Leaf 40," made only by Tobacco By-Products & Chemical Corporation.

Distributed In Australia by Neptune Oil Company, Melbourne, and by Producers' Cooperative Distributing Society, Sidney

MANUFACTURED BY
Tobacco By-Products & Chemical Corp.
(Incorporated)
LOUISVILLE, KENTUCKY, U.S.A.

A week or so before sowing or planting, the top spit of ground may be lightly forked over and some manure added. Good short stable manure can be used with good effect, or one or other of the artificial fertilisers at the rate of 2 to 4 ozs. per square yard might be employed. When dry weather comes the roots of the plants pass downwards to the more retentive subsoil, where they find the moisture that they require.

Concentrate on Salads.

Mustard and Cress are favorites in the salad bowl, and to keep a constant supply available they should be sown in succession at fortnightly intervals.

Lettuce entails comparatively little trouble, and can be grown in almost any position. Thinning and transplanting must be done early, otherwise the plants will become straggly and have a tendency to bolt instead of developing hearts. Eight inches apart is not too much room to leave the plants. From the time of sowing it takes ten to twelve weeks for Lettuces to develop into good-sized plants.

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Licensed under Farm Produce Agents Act
Highest Market Prices — Prompt Returns — Reliable Advice
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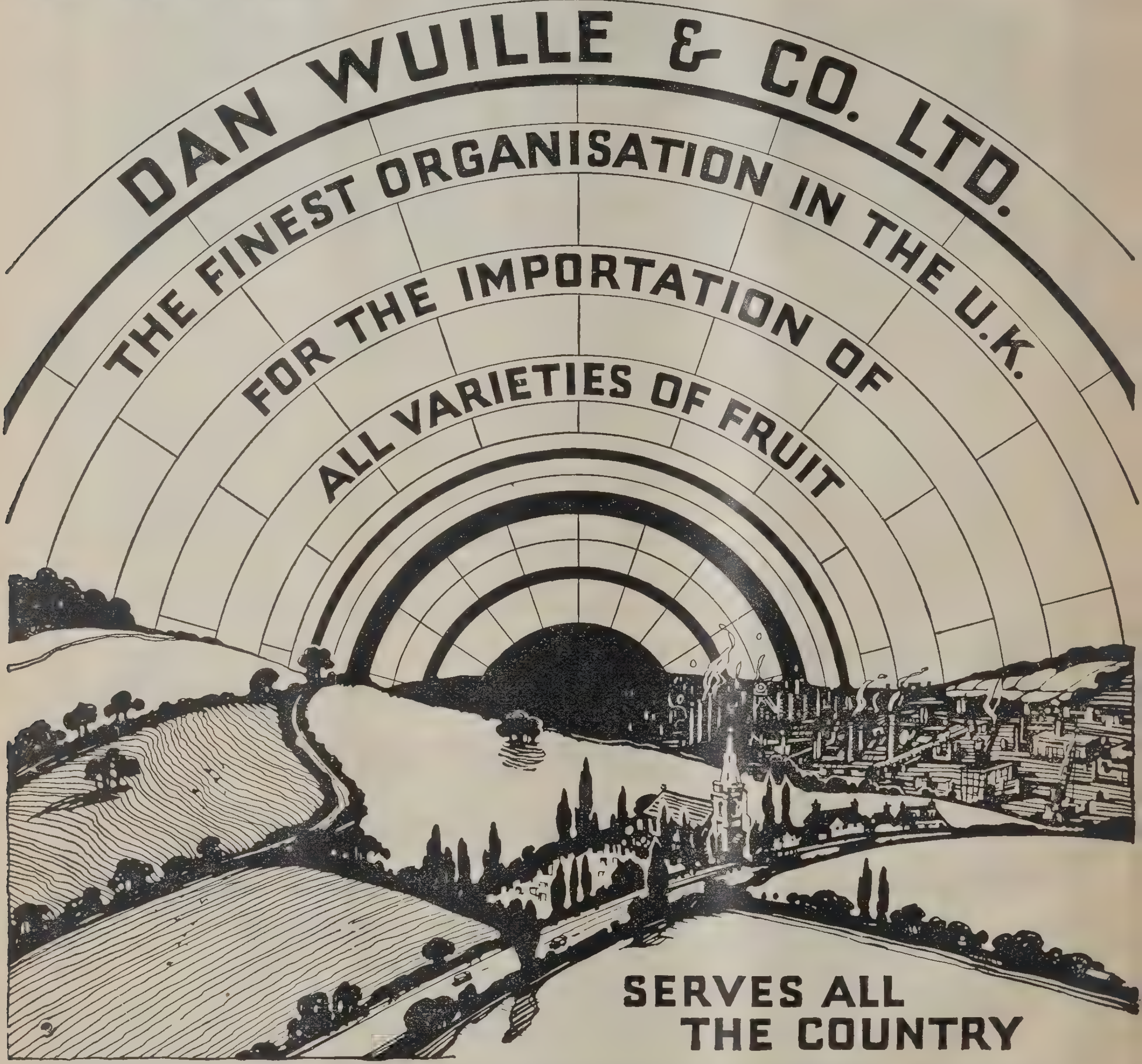
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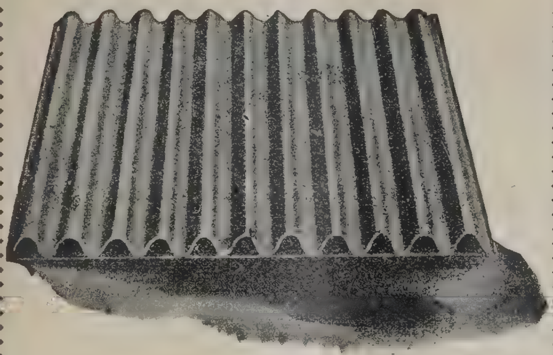

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APPLE AND PEAR EXPORT.

4,000,000 Cases Estimated from Australia.

New Zealand's Estimate is 1,250,000 Cases.

A preliminary estimate of the export of Australian Apples and Pears is as follows:—In cases, Tasmania 2,750,000, South Australia 500,000, Western Australia 350,000, Victoria 200,000, with relatively small quantities from N.S.W. and Queensland.

At this stage the total probable export would appear to be in the region of 4,000,000 cases. Last season the total was just over 3¼ million cases.

New Zealand Exports.

There are heavy crops in New Zealand, and the export estimate is for 1,250,000 cases of Apples and 57,000 packages of Pears.

Pears from Doncaster.—Last season 17,000 packages of Thieles "Fireside" brand Pears were exported to the United Kingdom. The varieties included Williams, Howells, Bosc, Josephine, Packhams, Winter Nelis, and others. Most of the Pears arrived sound and sold well, the exception was the s.s. "Limerick." Despite the loss on this vessel, the season's average was 11/9 on local station.

The Christmas number of the "Australasian Poultry World," which is now obtainable from any newsagent at 6d. a copy, contains much of interest to all engaged in the breeding of poultry, either as a side-line on the orchard, or as a full-time occupation.

Amongst the features of the issue are illustrated articles on chicken rearing and poultry management, rearing for market, hot weather management of ducks, best methods of dealing with broody hens, illustrated articles on Black and Brown Leghorns, home notes and recipes, notes on Bantam and Pigeon Breeding, Country Show Reports, Egg-laying Competition Scores, and Reviews of the Industry. Be sure and get a copy from your agent or from the Horticultural Press, Box 1944, G.P.O., Melbourne, C.1.

BENDIGO PRESERVING CO.

Despite difficult trading conditions, the Bendigo Preserving Co. closed their financial year with a loss of only £66. The directors state that, with a business revival, the company would purchase much larger quantities of fruit and Tomatoes for processing than hitherto.

THOUGHTFUL REFLECTIONS.

The Editor, "Fruit World."

Sir,—Now that the thrips has destroyed the fruit crop, it has turned its attention to the young growing tips of certain trees, and is sucking them dry and killing them. This is as much a visitation of Providence or an act of God as would be an earthquake or a hailstorm; the ordinary orchardist is equally helpless in the face of it.

The conditions of our land at present are not greatly different from those foretold for the ancient Israelites if they forsook Jehovah. And as for them the condition for renewed prosperity was national repentance and return to the keeping of God's laws, so it would seem must it be with us.

You may say that religion is not your business; but it is everybody's business to try to improve the present disastrous conditions; and I suggest that religion is the only means.

If the heart and the outlook of our people could be made right, our troubles would rapidly right themselves; there would be no need for the prescriptions of experts in economics and the like. Will your thoughtful readers think along these lines and each see what he can do?

Yours, etc.,

SUBSCRIBER.

Hurstbridge, 31/10/31.

Black Embryo Apples.—"Islander," Devonport, Tas., writes:—Can any of your readers inform me whether they have ever examined the black embryo Apples so frequently found on Sturmer, and other, Apple trees? It would appear not unlikely that they form hosts for black spot germs.

It would also be interesting to know what shelter trees have been found most suitable. I have used Lambertiana largely; expert neighbors now tell me that this tree, and other Pines, form excellent shelter for many pests that trouble the orchardist. Are the Eucalypts free from this objection, and if so, what varieties are best for use in Northern Tasmania?

Answer (by H. M. Nicholls, Microbiologist, Tas. Dept. of Agriculture).—The black embryo Apples found on Sturmer and other Apple trees do not harbor disease. The tendency of every flower bud on an Apple tree is to produce more Apples than it can support, and soon after the fruit sets a number of the embryo Apples always die off. These do not fall as a rule, but remain on the tree in a dried-up condition during the summer and ensuing winter. Sometimes they are covered with saprophytic fungus growths. Mummy Apples are sometimes produced by such diseases as Gloeosporium rufomaculans and Sphaeropsis malorum, but these are always much larger and quite different in appearance to those to which your correspondent alludes.

I am not acquainted with any orchard pests that grow on Pine trees, with the exception of one or two of the root fungi. The most dangerous shelter that can be used for an orchard is a Hawthorn hedge. Pine trees and Eucalypts are quite safe as far as orchard pests are concerned, though they eventually do injury by impoverishing the ground.

Answer (by F. Walker, Launceston).—Re "embryo Apples" on Sturmers—they would certainly be better removed from the trees when pruning, as no doubt they may add to the risk of infection.

Re shelter trees—the best variety to plant is Eucalyptus botryoides, though most growers prefer the Cupressus of sorts such as Lambertiana and macrocarpa. From experience we do not think that these offer any more or less protection to the various orchard pests than the Gums. The best protection for the fruit trees is effective use of the spray pump.

PROFESSOR WADHAM.

To Remain in Victoria.

Great pleasure has been expressed at the announcement early in November that the services of Professor Wadham, Dean of the Faculty of Agriculture of the University of Melbourne, are to be retained.

Prof. Wadham was offered a position in the Cambridge University, and he asked for a guarantee of life tenure in his position at the Melbourne University.

Many efforts had been made in various directions to obtain this guarantee, but without avail. However, at a meeting of the Finance Committee of the University Council an offer was made to Prof. Wadham stating that any re-arrangements necessary would be concerned only with the domestic management of the University. Professor Wadham accepted this offer, and steps will be taken to amend the University statute to give effect to the new agreement.

The Cambridge University agreed to release Professor Wadham from his agreement, who expressed appreciation of the forbearance of Cambridge in this matter.

TIMBER FOR FRUIT CASES.

Shooks Being Standardised.

With a view to obtaining improvements in quality and standardisation of thicknesses of box shooks, the following Melbourne manufacturers of fruit cases have held two conferences recently in conjunction with Messrs. C. H. Tutton Pty. Ltd.:—W. Angliss & Co. Pty. Ltd., Cooperative Box Co. of Victoria Ltd., Jas. Moore & Sons Pty. Ltd., Chas. Rouch Pty. Ltd., Jas. Ryan, John Sharp & Sons Ltd., Alex. Sturrock & Sons Pty. Ltd.

It was found that owing to the varying sources of supply of imported softwood with a corresponding variation in the thickness of the lumber and the different types of machinery used by the respective millers, the shooks being manufactured were not uniform.

At the first conference each box factory submitted reports by its executive and "saw-doctors" of its method of manufacture, and, at the second meeting, it was decided that a number of suggestions to improve the quality of the output could be adopted with advantage.

It is now expected that by incorporating the above improvements in the manufacturing units, a uniform and definitely improved shook will be supplied by these manufacturers.

Mr. H. N. Wicks, Chairman of the Advisory Board of Agriculture, South Australia, recently gave a wireless talk, pointing out the great economic value of the fruit industry to Australia. He put in a plea for the providing of as much work as possible before Christmas.

FEDERAL ELECTIONS.

The Victorian Fruit Marketing Association has sent a circular to its members, suggesting a series of questions to be asked of candidates at the forthcoming Federal elections.

These questions refer to tariff reduction, the sugar agreement, maintenance of present bank exchange rate, Imperial preference, Gazettal of Waterside Regulations.

[R. E. Boardman, 78a Victoria St., Melbourne.]

SUGAR AND FRUIT INDUSTRIES.

Minimum Prices for Peaches, Pears and Apricots.

Berry Industry to be Assisted.

AT a meeting of the Fruit Industry Sugar Concession Committee held at Melbourne on November 24, it was decided that owing to short crops, the minimum price for canning fruit in the coming season would be:—Peaches, £12 per ton; Apricots and Pears, £10; Peaches for jam, £7; Apricots and Peaches, unfit for canning, but fit for jam or pulp, to be paid for at jam prices.

These prices are on the basis of delivery to growers' railing siding or district factory: Metropolitan processors to pay freight from grower's railway siding. Trade practices, however, are not to be disturbed, as, for instance, where growers cart their fruit to factories they will continue to do.

The foregoing are minimum prices only, which must be paid if manufacturers are to obtain the rebate of £6/5/- per ton on sugar.

Assisting the Berry Industry.

The berry industry, which has suffered severely this season, is to be helped. £15,000 will be provided to assist the export of Raspberry and Black Currant pulp of the 1931-32 season, providing that processors agree to handle the whole of the 1931-32 crop at published minimum prices. Out of this £15,000 exporters will be guaranteed against loss on export up to £10 per ton of pulp.

An advance of £5 per ton of pulp will be made upon shipment, and the balance will be deferred until production of account sales to the Committee. In the event of the nett f.o.b. return being in excess of £30/11/8 per ton for Raspberry pulp and £29/13/- per ton for Black Currant pulp, the deferred half of the contribution will be correspondingly reduced.

(b) An amount not exceeding £2,000 will be made available to assist the export of Loganberry and Gooseberry pulp on similar terms to the foregoing, with the exception that the figures of nett f.o.b. return will be £28/0/8 per ton in the case of Loganberry pulp and £20/5/11 per ton for Gooseberry pulp.

(c) An amount not exceeding £3,000 will be made available to assist the export of the following canned fruits to the United Kingdom only:—Golden Drop Plums, Green Gage Plums, Gooseberries, Raspberries, Loganberries, and Strawberries. The actual amount which will be granted to exporters will be determined upon production of account sales, but the maximum assistance will be 1/- per dozen calculated on a 30 oz. tin basis.

It was also decided that the export of canned and crushed Pineapple should receive assistance, and an amount not exceeding £10,000 has been allocated for this purpose, subject to further investigation being made by the Department of Markets into certain proposals which were placed before the Committee.

The question of assisting the export trade in jams was also discussed, but as the Committee is not yet in possession of sufficient data on the position generally, it was decided to defer the matter for consideration at the next meeting.

Questionnaire re Thrips.—The Victorian Fruit Marketing Association has issued a questionnaire seeking detailed information from growers regarding varieties, dates of blooming, cross-pollination, windbreaks, drainage, etc.

Information is invited from all growers on this subject. Growers are invited to write to the Secretary Victorian Fruit Marketing Association, c/o "Fruit World," Box 1944, G.P.O., Melbourne.

FRUITGROWERS' COOL STORES' ASSOCIATION OF VICTORIA.

THE QUARTERLY MEETING of the Fruitgrowers' Cool Stores' Association of Victoria was held at the Employers' Federation Rooms, Melbourne, on November 10. There were present:—Messrs. A. J. Harris (Blackburn); W. Mock, A. R. Fankhauser, G. F. Fankhauser (Burwood East); H. L. Tomkins, R. Langley, W. Lipscombe (Croydon); R. M. Finlay (Diamond Creek); J. Robinson, C. Sell, W. Johnson (Doncaster Central); C. H. Coleman (Mount Waverley); J. H. Lang (Harcourt); August Thiele, Frank Petty (Orchardists); W. Mackinlay, H. Pump, J. G. Aird (Ringwood); H. J. Willoughby, F. Stockton (Tyabb); F. J. Byrne (Wantirna); T. W. White (Somerville); A. E. Hocking, E. H. Hatfield, W. Lipscombe (private stores); Mr. J. M. Ward (Superintendent of Horticulture), and the Secretary, J. G. Aird.

The President, Mr. A. E. Hocking, occupied the chair.

Tariff Items.—It was decided to contribute £5/5/- towards the funds of the Tariff Reform League.

A protest was entered against the proposed increased duty on nicotine sulphate, and it was decided to leave the matter in the hands of the President and Secretary with power to act.

In reply to the request of the Cool Stores' Association that tests be made to ascertain the loss of weight of fruit during storage in air circulation and direct expansion stores respectively, the Department of Agriculture advised that it was improbable that any fruit would be stored in piped chambers at the dock stores this season, and offered the services of Mr. Tindale to conduct the test at any store that had both systems installed.

It was resolved that a copy of the correspondence be forwarded to the Blackburn and Somerville stores, asking the managements of those stores whether they would be favorable to having these experiments made at their respective stores and whether they could arrange the necessary facilities.

The Thrips Pest.—Delegates exchanged experiences, but no method of control was reported. It was decided to ask the Government Meteorologist for a return showing the temperatures during September and October in each of the thrips seasons.

It was decided to ask the Victorian Fruit Council to arrange a deputation to the Minister for Agriculture, requesting intensified research.

Interest Reduction on Loans.—A reply was received from the State Treasurer of this Association's request for a reduction of interest on the lines of the Premiers' plan for the rehabilitation of Australia, advising that no reduction would be made this financial year, and that no decision had been made as regards future years.

The matter was left in the hands of the President and Secretary to arrange for a deputation at a suitable date.

It was resolved that the Government be asked to defer the next three payments of principal and interest on loans to cool stores under the Fruit Acts until the end of their respective agreements.

Eat More Fruit Campaign.—A resolution was carried, requesting the Chairman of the Apple Campaign Committee to hand over the balance of the Apple Campaign Fund to this Association to be used for propaganda purposes.

It was decided to ask fruit commission agents to make an arrangement between themselves whereby a small charge be deducted from account sales of growers to be handed to the Victorian Fruit Council for propaganda purposes.

The report of the sub-committee on "Sweet Cider" was deferred till next meeting.

VICTORIAN FRUIT MARKETING ASSOCIATION.

The monthly meeting of the Executive of the Victorian Fruit Marketing Association was held on November 20, Mr. C. M. Griffeth presiding. There were also present: Messrs. J. W. Bailey and H. G. Colombie, Vice-Presidents, J. B. Mills, C. H. Jost. E. I. Lawford, W. H. Carne, F. R. Mellor, G. W. Brown, H. Ford, A. S. Harrison, W. A. Webb, Hutchinson, F. Cave, C. J. Parnham, and the Secretary. Messrs. Ward, Meeking and Krone attended from the Department of Agriculture. Other members present included Messrs. R. Bailey and N. N. McLean.

Mr. Krone explained the Departmental Apple-packing chart, and urged that growers should pack the "counts" instead of slavishly following "sizes" or diameters.

The proposed duties on nicotine and bluestone were opposed.

Thrips Research.—Mr. Brown reported that Mr. J. W. Evans, Entomologist, Council for Scientific and Industrial Research, had addressed the V.F.M.A. Research Committee, giving valuable information: experiments with a repellant were promising. It was decided to request the addition of a trained horticulturist and a trained chemist to the entomological staff. A questionnaire to be answered by growers was drafted. There was a long discussion as to the best method for assisting growers in distress. This matter was deferred till next meeting.

Several new members were enrolled.

Case Timber Specifications.—Mr. Bailey reported that conferences with hardwood saw millers had been held. The use of seasoned timber was desired to arrive at standard specifications.

DRIED FRUITS CONTROL.

Appeal to Privy Council.

The appeal to the Privy Council by F. A. James, of Berri, South Australia, against the High Court's decision to uphold the action of the South Australian Government in expropriating his fruit, will shortly be heard.

Lemon Consumption Campaign.—The Victorian Central Citrus Association is conducting a campaign to assist in the consumption of the heavy Lemon crop. Victoria has 200,000 bushels this season.

Australian and New Zealand Exports.—Report just to hand from F. W. Moore & Co., London, giving a valuable summary of the Australian and New Zealand export season of fresh fruits to U.K. and the Continent, in the 1931 season. Details next issue.

NEW ZEALAND.

Birkenhead District, Auckland, N.Z.

This district being near to Auckland, it will in the near future become largely residential. Apple trees of many varieties were mostly planted in years gone by, lately many trees have been worked over chiefly with Delicious. There have been fair plantings of stone fruits, chiefly Peaches, which do well here, the Paragon variety being a good standby. But it is as a Strawberry-growing district that it excels, it is the largest Strawberry-growing district around Auckland, the berries are taken in by motor direct to the market, thus saving a lot of handling, consequently the berries are put before the buyers in a good condition. Many growers have had heavy losses of plants through disease.

Crop prospects:—Apples will probably be lighter this year, especially Delicious, which were heavy last year. Peaches and Plums, fair setting. Grapefruit and Lemons in bloom.—Ezra.

HENRY JONES CO-OPERATIVE LIMITED.

At the recent annual meeting of Henry Jones Co-operative Ltd., jam manufacturers and fruit canners, the chairman of directors (Mr. A. W. Palfreyman) stated that a reduced dividend was being paid this year, due to the heavy increases in taxation. While extra taxation was inevitable, a tremendous burden had been placed upon industry, making it extremely difficult to provide funds for the extension of industry.

Growers were expecting good fruit crops this season, but unfortunately their hopes were shattered because of a visitation of thrips. Good prices for fruit, too, had been anticipated, owing to the profitable prices ruling in Great Britain and Canada.

The market in Great Britain had greatly improved. The change in sterling had placed Californian fruits at a great disadvantage with Australian. The trade treaty with Canada had vastly improved the possibilities of the export trade with that country.

Jam Fruits in Tasmania.

Only in Tasmania, which had escaped the devastation by thrips, was there a possibility of harvesting a fair crop of fruit, continued Mr. Palfreyman, but the Tasmanian supplies were mostly for jam making, and although the quality of the fruit grown in that State was probably unequalled in the world, they could not, unfortunately, look for any substantial increase in the export of jams from Australia, as both Great Britain and Canada manufactured their own requirements of jam, whilst they were largely dependent on Australia, South Africa and California for their supplies of canned fruits.

The balance-sheet showed a distribution to shareholders of £89,386 in dividends for the year on an issued capital of £1,430,173.

The report and balance-sheet were adopted, and the retiring directors, Messrs. A. W. Palfreyman and T. B. Nossiter, were re-elected.

WAGES AT RENMARK.

The Renmark Arbitration Committee has announced the following wages awards from November 1, 1931, to January 31, 1932. The following figures denote the wages per week and per hour respectively.

Expert pruners, 75/-; 1/7⅝; sweat lumpers, dipmen, barrowmen, carriers out from dip, gangers, foremen, persons in charge of orchards, 72/-, 1/6⅞; shaft sinkers (sinking shafts over 12 ft.), 72/6, 1/6⅞; box makers, 71/3, 1/6⅝; other seasonal employees, 66/6, 1/5½.

Females over 18, 44/6, 11¾d.; females, juniors, 17 to 18 years, 39/6, 10½d.; 16 to 17 years, 36/6, 9¾d.; under 16, 32/-, 8½d.

Males, juniors, 20 to 21 years, 64/9, 1/5⅜; 19 to 20, 61/-, 1/4½; 18 to 19, 46/3, 1/0¼; 17 to 18, 37/-, 9⅞d.; 15 to 17, 33/-, 8¾d.; under 15, 23/-, 6⅛d.

Deductions:—Rent of four roomed house 12/- per week, and for firewood supplied, at cost.

Employers may engage employees by the week or by the hour for any period.

CITRUS CONTROL IN SOUTH AUSTRALIA.

Resolutions in favor of legislative control for the orderly marketing of citrus fruits were recently carried at Waikerie, Renmark, Barmera, Moorook, Kingston, Cobdogla and Pyap. The proposition was defeated at Berri and Ramco.

A Well-Kept Orchard.

Grower Masters the Thrips Scourge.

Mr. J. D. Carpenter's Success at Hastings, Mornington Peninsula.

THE ORCHARD of Mr. J. D. Carpenter, of Hastings, is always referred to as the show property of the Peninsula; in fact, many are of the opinion that there is no better orchard property in Victoria.

Despite the thrips scourge in 1926-27 and 1931, Mr. Carpenter has never failed to harvest satisfactory crops annually. His methods for providing against the thrips menace are being followed successfully by other growers. Briefly, his success in this connection is the grafting of a bough of Rokewood in the centre of the Jonathan trees.

* * * * *

There has been a gradual evolution in the method of setting out orchards. Years ago varieties were planted in solid blocks without special provision being made for pollinating varieties. Then came the idea of planting pollinators—every third tree in every third row. In ordinary seasons this method is sufficient to ensure even crops, but this method fails when thrips are present in plague form.

It is in such seasons as 1927 and 1931 that the benefit of Mr. Carpenter's system with the Jonathan variety is seen. In the Jonathan trees on the boughs surrounding the grafted Rokewood branch the fruit has set for a heavy crop, while throughout the trees as a whole the crop is a good one.

It is not as though this happened in isolated trees. One sees it throughout the entire orchard. Jonathans in Mr. Carpenter's orchard have set for a good crop, and it should be remarked the same has been the experience with other local orchardists where this principle of grafting the pollinating variety on the Jonathan trees has been followed.

* * * * *

Mr. Carpenter's orchard comprises 60 acres. It was previously owned by the late Mr. Clement Renard. The soil is heavy and retentive, though it breaks up well under cultivation. The principal varieties grown are Jonathan, London Pippin, Rokewood, Rome Beauty, Reinette, Stewarts and Delicious. A few Pears, Plums and Apricots are also grown, but to quite a limited extent

The orchard is planted on a pleasant, gentle slope, facing the Western Port Bay. A windbreak of Pine trees shelters the main portion of the orchard. Here is an interesting circumstance. The rows of trees nearest to the windbreak and which are consequently better sheltered have set better crops than those further away, and consequently further away from the windbreak, and which would thus feel more keenly the effect of the wind.

Regular Manuring.—Mr. Carpenter is a believer in manuring the orchard every year. Blood and bone, also nitrophoska, are applied every season on the principle that it pays to feed the trees. Occasionally a top-dressing is given to bring on a crop of capeweed, which is turned in in the spring to add humus. The trees are thus kept in good heart and growing vigorously. He aims at having a uniform but not over heavy crop each season. In the winter before the "on" years he severely reduces the fruiting spurs and laterals. By cutting the trees vigorously, supplying manure regularly and attending to consistent cultivation and spraying, the trees are kept in good heart, thus producing regular crops of high quality fruit. The result has been, of course, that Mr. Carpenter has been able to build up a good name for his pack for local, interstate, and export trade.

An interesting aspect of this subject of reducing the fruiting spurs was seen on the London Pippins this season. Last year they bore heavily and in the winter the fruiting spurs were heavily cut so as to reduce the expected crop of 1932. However, the thrips scourge developed, and what would have been a moderately large crop has been reduced to a very light one of this variety. London Pippin, by the way, is not deemed to be a profitable variety to grow.

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Mr. Carpenter has his own cool store on the property. This has a capacity for storing 7,000 cases. There are two chambers, operated on the direct expansion system. The store has a 7-ton Werner compressor, worked by a 17 horse-power Blackstone engine. The cool store building is provided with ample space for grading and packing fruit, also for the storage of cases. Mr. Carpenter speaks favorably of the Harvey grader which he has installed, this grader having patent attachments which prevent Apples from being graded on the flat surface, each Apple being automatically turned on its edge, and thus graded correctly according to its circumference.

This orchard is on the line of the water system supplied by the Bunyip River to the Naval Base. By connecting a pipe line he has an excellent pressure of water for filling his spray vats. It is also laid on to the house.

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It was a pleasure to inspect this up-to-date, well-kept orchard. Mr. Carpenter is a practical and capable fruitgrower, who is highly esteemed. He takes a keen interest in matters affecting district welfare, and is an appreciative member of the Victorian Fruit Marketing Association.

Hastings (Vic.).—Jonathan Apple trees in which branches of Rokewood have been grafted. Good crops are showing despite the thrips. A hundred yards away, Jonathans, in which Rokewoods were not grafted, failed to set. Mr. G. H. Sprague (Secretary Hastings Cool Store), is seen in this picture. This orchard adjoins that of Mr. J. D. Carpenter.

Victorian News and Notes.

CROP ESTIMATES.

In the seasonal report for October of the Victorian Department of Agriculture, which was issued on November 14, it was stated that the Apple yield in Victoria would probably be not more than 30 per cent. of a normal crop and that the Pear crop would only be about 60 per cent. of normal. Many trees have been injured owing to the wet winter. This, in conjunction with the damage done by thrips to blossoms, had resulted in an abnormally light setting of Apples.

Reports had been received that Pears, which set much better, were thinning out in some districts.

The Cherry crop is normal in most districts, with Plums patchy.

In many citrus areas the blossoming has been patchy and, generally speaking, badly infested with thrips. However, close observation has failed to detect any damage to the blossom. The importance to the citrus grower of a thrips infestation lies not so much in the blossom period as in the subsequent setting period.

From preliminary tests at Merbein, it is believed that nicotine sulphate and white oil give satisfactory control.

In the viticultural areas the rainfall for October was below the average. Most wine varieties have an excellent showing of fruit.

Sultanas are showing up well. Growers have responded well to warnings to swab and spray against black spot, and these sprayings are being repeated. In some districts Erinose is showing freely. Sulphur dustings should be given.

Berry-growing at Silvan.

Silvan (16/11/31).—Mr. H. Henderson, Hon. Sec., Silvan Fruitgrowers' Association, advises as follows:—

Berry growers of Silvan are faced with an abnormally poor season, and it is impossible to estimate the losses occasioned by thrips. Some growers had picked as many tons of Strawberries by November 16 last season as they have picked punnets this. There is, however, the possibility of a second crop later in the season.

Gooseberries and Red Currants are estimated at half average crop, while Loganberries will be very light, and Blackberries (Lawtons), will be scarce.

Raspberry flower buds are just opening, and thrips are in attendance, but as this pest has eased considerably, there is a possibility of a medium crop. The ravages of the locust in Africa has little on the Victorian thrips, for on two occasions now it has been observed as fine dust completely filling the atmosphere from Williamstown to the Warburtons. It seems impossible to find remedial measures to eradicate a pest that covers such vast areas and in teeming billions.

Plums are light and Passions slow to recover from the wet conditions during the winter and spring.

It is confidently expected that the minimum prices for berries to processors will be considerably increased by the Sugar Concession Committee at their meeting this month. These are difficult times, but prices that operated 25 years ago are not compatible with present-day conditions.

The difficulties in fixing minimum prices for all States are fully appreciated, as also the danger of Tasmania securing orders for the bulk of factory requirements, should their prices be less than those of other States. Victorian growers are mostly dependent on market sales and direct trading, and it therefore becomes apparent that the sugar concession is of little benefit to the berry grower because of the advantage processors have over the housewife. The whole position bristles with difficulties. Remedial measures there are, but that involves the Sugar Agreement, State-aided processors, and growers.

Crops Light at Kyabram.

Kyabram (20/11/31.—Mr. C. R. Roper, Kyabram, sends the following information:—Fruits mainly grown are canning Peaches, Apricots and Williams Pears.

Canning Peaches set about one-third crop. Since then hail has further reduced this.

Apricots were light, and hail has done considerable damage to these also.

Williams Pears promise an average crop.

Altogether the coming season's crop promises to be very light.

KYABRAM FRUIT PRESERVING COMPANY.

Annual Meeting.

Mr. R. Gent, chairman of directors, presided at the ninth annual meeting of the Kyabram Fruit Preserving Company Ltd., on November 20 The chairman of the Water Supply Commission (Mr. W. Cattanach), and Mr. Allan, M.L.A., were present, also about 100 shareholders.

The profit for the year was shown at £97, as compared with a loss of £160,000 in 1930.

In his report, Mr. Gent stated that from December 1, the selling forces of Ardmona and Kyabram canneries would be merged, thus entailing a further saving. He stated that the net turnover for the year was a record, 103,000 cases of fruit being shipped to the United Kingdom.

Mr. W. Cattanach congratulated the shareholders on the position of the company, and said he was gratified with the result of the year's operations.

Mr. Allan, M.L.A., expressed the opinion that the fruit industry was on the rise. British legislation to prevent dumping would have a beneficial effect upon Victorian growers.

Mr. W. F. Cooper, Lancaster, said that the canneries should fill their warehouses when the markets were low.

It was stated by Mr. F. J. Churches that the Government should wipe out interest on money which the canneries had been forced to spend on export, which was an experiment conducted by the Government and not by growers or canners.

Mr. J. Higgs was re-elected unopposed to the directorate, and Mr. J. Stubbs was elected auditor.

PARASITIC CONTROL OF THRIPS.

Mr. Reginald Kelly, a Melbourne solicitor, who has studied the species of thrips found in Australia for many years, said, at a meeting of the Microscopical Society of Victoria, on November 17, that there were 86 genera in Australia, of which there were 284 species. Fifty-six of these were found in Victoria.

It was a native species, thrips imaginis, which was doing most of the damage; 160,000 insects could be produced from a single mature female in a few days.

Mr. Kelly further stated that from a theoretical point of view no economic method of control had yet been discovered. It was probable that parasites would prove the only successful method, but very few were known, and the method would be difficult to apply.

Ardmona.—The Ardmona Fruit Products Company have distributed £2,800 among grower shareholders, pro rata on the fruit delivered to the cannery last year. This is equal to about £1 per ton, bringing the payment for last year up to £6 a ton.

The Ardmona Fruit Products Company gained the following awards for canned fruits at the Imperial Fruit Show at Nottingham, the fruit being taken from bulk store. Three gold medals, four silver medals and two bronze medals.

Doncaster.—Mr. A. F. Thiele writes under date November 16:—I estimate the fruit crop in our district at about 20 per cent., which is the lowest on record.

The varieties chiefly grown here are Pears, Peaches, and a few Apples and Lemons. The Lemons, of course, have been very heavy, but the thrips are destroying the blossom for the later crop.

The Apples promised to be very heavy, but the thrips have destroyed nearly all the blossom, and the crop is almost a failure.

Peaches are also very light, which is due to the wet winter A great number of the trees have died with the wet, and others have shed all their fruit.

The few Plums which are grown in the district are also a failure.

Pears are patchy. A few varieties fair; others are a complete failure, which will mean that there will not be many for export. This is a great pity, as the growers were just beginning to establish a good export trade in Pears.

"Orchardist," Tyabb, Vic., writes:—In 1927 the so-called thrips year, I wrote to the press, pointing out that while the "Jonathan" blossom had almost completely failed to set, other varieties in the same orchards and blooming at the same time had set, in most cases, every bloom, viz., Statesman, Duke of Clarence, and an Apple known here as "Sunnyside," but properly, I believe, as "American Summer Pearmain." Therefore, to put all the loss of Apples down to thrips seems to fail to meet the case.

As regards this district, the case is very similar this year. Jonathan is "patchy," but I think every bloom of "A.S.P." has set.

My "William's Favorite" are very light, though some "Statesman" grafts in the same tree and blooming about same time have all set. Presumably, therefore, the tree is healthy and thrips didn't prevent Statesman setting.

Other districts may be quite different, but I don't think thrips is even the main source of the trouble down here. I shall be interested to hear whether there were not any Apples of any variety in districts where the main crop has been a failure.

Other "tracks" will be difficult to follow. Weak Democrats have failed to set, but so has a row of strong top grafts of the same variety.

Drouin.—Mr. R. W. Waddell reports that he expects a crop of about 1,400 cases of Apples, the bulk of which will be for export. Before the thrips came along he anticipated having between 4,000 and 5,000 cases.

CUTWORMS.

The Victorian Government entomologist (Mr. C. French) has received reports from many districts stating that the common cut-worm moth is very prevalent, the insects being numerous in the Doncaster, Bendigo and Croydon districts and on the Mornington Peninsula. There are at least two breeds of these pests in a season.

Excellent results have been obtained by the use of baits, a particularly good one in controlling the pest being made up of 10 lb. bran, 4 lb. molasses, 4oz. Paris green. This mixture, which is made up into a paste with water, is of no use when dry.

SOUTHERN FRUITGROWERS' ASSOCIATION.

Marketing Bill Opposed.

At a meeting of the Southern Fruitgrowers' Association on November 5, Mr. L. Pepperell presiding, Mr. J. P. Gibson reported that great interest had been aroused in schools, factories and workshops in regard to fruit as a diet.

It was decided to urge Departmental investigation into the thrips plague.

Marketing Bill.—It was reported that the Minister for Agriculture proposed to bring in a Marketing Bill on similar lines to the one rejected last year. It was decided that the matter be closely watched, and if necessary, to call a monster meeting in opposition.

BERRY GROWERS.

Supplying Wood for Jam Factory.

BERRY GROWERS in the Dandenong Ranges, near Melbourne, have expressed keen appreciation of the action of the Australasian Jam Co. Pty. Ltd. in arranging for delivery of wood for their furnaces. Previously this company used coal, but to assist growers, most of whom have lost their crops through the thrips plague, wood will be used, the weekly supply being 200 to 250 tons.

Mr. W. B. Champ, President of the Wandin Progress Association, called a meeting, which was largely attended, to discuss details. Messrs. Champ, Haig and Horne were appointed to confer with the A.J.C.

Bunyip (12/11/31).—About 30 growers from Garfield and Bunyip attended a meeting at the home of Mr. Fred. Thomas: no one could report any success against the thrips. Indeed, some men who did not spray against them at all have a fair crop of Rome Beauties—while others who fought them have nothing. It is anticipated that there will not be 500 cases exported from this district. If the cool store can be filled, that will be as much as can be managed.

Oranges for Canada.—Messrs. Scott & Edwards, fruit exporters, of 129 King-street, Melbourne, report that the Oranges they shipped per s.s. "Canadian Constructor" to Montreal on September 2 arrived showing 5 per cent. decay, and the Washington Navel Oranges packed by the Murrabit Packing Co. in bushel-and-third cases averaged 4.40 dollars, or 22/6 sterling. The returns to the growers should be satisfactory with the present rate of exchange. The agents strongly recommend our shipping immediately 500 to 1,000 bushel-and-third cases of Valencia Oranges.

Victorian Fruit Council.—At a meeting of the Victorian Fruit Council on November 26, it was decided to endeavor to co-ordinate the research activities of the affiliated societies and to invite the Dried Fruits Association, Northern Victoria Fruitgrowers' Association and Berry Growers' Association to join.

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The East Burwood Fruitgrowers' Association is asking the Department of Agriculture to employ more experts to find a remedy for the thrips menace.

Mr. J. W. Evans, Entomologist, Council for Scientific and Industrial Research, addressed a meeting of the Research Committee of the Victorian Fruit Marketing Association in mid-November. Mr. Evans is devoting his whole time to the study of thrips. Experiments with a repellant are promising.

GIPPSLAND DISTRICT FRUIT.

Pakenham.—At the annual meeting of the Gippsland Fruit Marketing Association held at Pakenham, the following were elected as a Committee of Management:—Messrs. F. Kennedy (Pakenham), W. C. Harvie (Pakenham Upper), R. Wash (Bunyip), J. Bailey (Narre Warren), C. Colles (Beaconsfield Upper), T. Whiteside (Officer), J. J. Ahern (Pakenham), Chairman; W. Carne (Pakenham Upper), Secretary; and A. Prendergast (Pakenham), Auditor.

THRIPS RESEARCH.

Mr. John Valantine, Vice-President, Mt. Dandenong Fruitgrowers' Association, who has taken a great interest into thrips research and organised several deputations to Governments during the past five years, reports that the Croydon Agricultural Society is organising a meeting of all fruitgrowing organisations and interested horticulturists throughout the State to discuss the thrips menace and subsequently to interview State Ministers. It is understood that a Committee of Enquiry is desired to take evidence on the thrips question.

Somerville.—Messrs. John Brunning & Sons report as follows:—With reference to our fruit crop, we previously estimated about 50 per cent., but we can do much better than that. Jonathans, 85 per cent. to 90 per cent. on trees 20 years and older, trees to 8 years 75 per cent.; Statesman, Rokewood, Alfriston, 100 per cent.; Reinette, 85 per cent.; William's Favorite, 30 per cent.; Gravenstein, 70 per cent.; Rome Beauty, Five Crown Pippin, 40 per cent.; Delicious, 10 per cent.; Stewarts, 75 per cent.

Pears.—W.B.C., 70 per cent.; Caps., 75 per cent.; Winter Cole, 70 per cent.; Broome Park, 65 per cent.; Packham's Triumph, 100 per cent.; Beurre Bosc, 20 per cent.

Apricots, 50 per cent.; Plums, 20 per cent.

Without doubt, the long, wet season was a contributing factor to the poor setting. Well-drained orchards set the best crops.

ORIENTAL PEACH MOTH.

Prevalent at Shepparton.

The Oriental Peach moth is reported to be prevalent in the Shepparton, Kyabram, and Ardmona districts. It is closely related to the codlin moth. The larvae bore into the succulent young shoots and later attack the fruit. The infestation is heavy and general, and is said to be likely to increase. Tests are being made with a small parasitic wasp with which it is hoped to control the insects. Lures are also being tried.

The Chairman of the State Rivers and Water Supply Commission (Mr. W. Cattanach) recently expressed concern because of the numbers of fruit trees which had died owing to the long wet winter. Discussions with settlers regarding drainage are proceeding.

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The President of the Shepparton branch of the Returned Soldiers' League (Mr. L. J. Michel) stated, at a meeting of soldier settlers, that unless there was a vigorous campaign of orchard planting, the outlook for the canneries was serious, and in five years the canneries would not be able to operate at a profit.

Campbells Creek.—The damage caused by thrips was very great. Apples, Pears and stone fruits are practically nil; of the Apples, the only variety to set is the Rome Beauty, and this in not encouraging quantities.

Harcourt.—All fruit crops heavily reduced.

EXPORT OF CANNED FRUITS.

That the record export figure of 717,000 cases of canned Peaches, Pears, and Apricots in 1930 would be exceeded this season was a statement recently made by the Minister for Markets (Hon. Parker Moloney).

By the end of October 716,000 cases had been shipped overseas. The whole of the export quota had been cleared. Prices on the home market had advanced appreciably during the last few weeks.

This clearance of stocks should enable canners to accept all fruits of canning quality offering next season, and growers should receive higher prices for their product than those obtained in 1930, stated the Minister for Markets (Mr. Parker Moloney).

TINNED FRUIT AS FOOD.

Mr. James L. Moore, Secretary Australian Fruit Canners' Association, in a recent article, vigorously supports canned fruits as an article of diet, quoting eminent medical authorities. This was in answer to a statement broadcast in which the value of canned fruits was minimised.

The Shepparton Cannery expects to process 2,500 tons of Pears this season.

If sufficient Tomatoes are available in 1933, the installation of special machinery for processing the crop will be considered.

The processing of Lemons next year is to be considered if there is a large crop.

PERSONAL.

Mr. W. A. Beauchamp, who until recently was assistant manager and secretary of the Port Huon Co-op. Co., Hobart, has resigned from this position to start in business on his own account as a fruit exporter. He has been appointed Tasmanian representative for the Overseas Fruit Organisation which Mr. H. G. Colombie represents in Australia. Mr. Beauchamp has been associated with the Port Huon Co-op. Co. Ltd. for ten years, and during this time he was in close contact with fruitgrowers throughout Tasmania, and has made a close study of the fruit export business. We wish him all success in his new sphere. Prior to leaving the Co-operative Co. he was entertained at afternoon tea on September 11, when, on behalf of the directors and staff, the general manager, Mr. J. P. Piggott, presented him with a gold watch as a token of esteem and appreciation of his services to the company.

S.S. "STRATHNAVER."

The P. & O. liner "Strathnaver," which made its maiden trip to Australia during November, is the largest passenger vessel which has ever visited Australian waters. Much public interest was aroused. The facilities for carrying refrigerated cargo are efficient and up to date. Long-distance thermometers are installed in the holds for carrying fruit.

Held Over.—Several interesting articles, reports and letters have been regretfully held over till next issue.

Seasonable Cultural Work.

Notes for December.

Spraying—Budding—Cultivation—Cover Crops—Citrus Culture.

Spraying Operations.

THE RAPIDLY SWELLING FRUIT will now require close adherence to the spraying programme, in order to ensure that all portions are kept covered with protective spray material at all times. With crops rapidly approaching the picking-time any easing-up in spraying, although always a temptation, is exceedingly dangerous, with the result of the year's work at stake. A fresh flight of codlin moth will be on the wing and laying from about the end of the first week in January, and as in some districts showers are frequent about this time the arsenate of lead sprays will require close attention.

Black-spot may be expected after periods of humid atmospheric conditions, and pome fruits will need another Bordeaux or sulphur spray according to requirements. Precipitated sulphur will now be the dominant spray for Apples, the harder commercial lime-sulphur having a tendency to produce burning and russeting.

Red mite usually becomes prevalent with the advent of warmer weather, and if not checked will at least seriously debilitate the trees, and very often check the development of the fruit and cause premature leaf-fall. Its presence is readily detected by the unthrifty, washed-out appearance of the foliage, and closer examination will disclose the presence of numbers of tiny, active, reddish insects mostly on the undersides of the leaves and on the fruit, where the tiny spherical bright-red eggs are laid in the calyx cavity. Control lies in spraying with oil emulsion, 1-100, plus black leaf 40, 1-800, thoroughly wetting the undersides of the leaves and fruit.

Quinces should not be omitted when using fungicides the application of lime-sulphur, or Bordeaux 3-4-50, being necessary for the control of fabraea scald in addition to the lead for codlin moth and leech or Pear slug.

Sulphur sprays should be continued on stone fruits up to about a fortnight prior to picking.

Budding.

From early in January onwards budding may be proceeded with, either on young stocks grown for the purpose or on trees where grafts have missed. Firm current season's wood is more satisfactory to bud into, but this cannot always be found in the desired position and it becomes necessary to resort to older wood, when, provided that the tree is vigorous and the bark is in good condition, satisfactory results can be obtained. However, fresh, hard, young growth should be selected if possible.

T or shield budding is almost universally adopted. One of the essentials is to have a thoroughly sharp smooth edge on the knife. It will be found that, in taking the bud, commencing the cut on the lower side and working upwards towards the tip of the shoot has some advantages over the reverse procedure. With stocks in good condition —that is, when the bark is lifting readily—when the perpendicular cut in the stock reaches the transverse cut previously made, a slight sideways twist with the point of the knife will be all that is necessary to raise the bark sufficiently to permit the insertion of the bud. Having been cut from the bottom, that portion of the bud will be stiff enough to be pushed down into position, and only sufficient bark to accommodate the bud will have been displaced. If possible, opening the bark for the full length of the cut, either with the blade or the handle of the knife, should be avoided, as the wound will extend further than is necessary and the injury to the delicate plant-tissue will retard the union.

Probably the two most common causes of failure, apart from unfavorable conditions in the stock, are slow working, causing the exposed surface to dry, or cutting the bud too thick. The cut should be only deep enough to include the bud and a trace of the underlying wood. Any excess of wood should be removed, commencing from above the bud and peeling downwards. This will leave just sufficient wood in the eye to give rise to new growth. If the removal of the wood is commenced from below the bud the wood in the eye may pull out, leaving only a hollow shell of bark that will not start into growth. After inserting the bud any portion projecting beyond the top cut should be removed, and the whole firmly tied with raffia or other suitable material to bring the parts into close contact and exclude the air and moisture.

Cultivation and Cover-crops.

The continuation of cultivation will not be practicable for much longer, and consideration of cover-crops should receive attention. For this purpose blue lupins are generally sown from November onwards, according to weather conditions and locality. Sowing for grazing purposes can be proceeded with, and a mixture, sown at the rate of about 15 lb. per acre, of Western Wolths or Italian rye-grass and prairie-grass should provide grazing for hoggets during the winter months as well as suppressing weeds, making a better sod for spring ploughing, and increasing the humus-content of the soil.

Citrus Culture.

Only such shoots as are required for terminal extension should be retained, and the remainder removed to ensure satisfactory development in the desired positions. Failure to limit the number of growing-points not only produces undesirable crowding, but frequently results in the tree making very little progress for two or three seasons until the most favorably situated shoot asserts itself and definitely takes a lead.

Young freshly planted trees should be gone over to remove any shoots starting from low down on the stem and anything which may develop into a secondary stem. For future handling it is important that the trees should have only one well-defined stem, of sufficient height to place the first fork well above the ground, and if the shoots are rubbed out before they harden the liability to infection by wound parasites is greatly reduced. The successful treatment of collar-rot and other bark-diseases is rendered much more difficult where crutches low down afford lodgment for disease spores, soil particles, and moisture.

Young borers will now be active, and should be treated before their operations become extensive. They may be located by their castings; small affected twigs should be removed and burned, and larger ones treated by injecting benzine into the holes and plugging with soap or putty.

Fruit should now be reaching the setting stage, and an application of a quick-acting nitrogenous manure, preferably during showery weather, is generally beneficial in carrying over the critical period.

Repeat the application of Bordeaux where necessary, in order to maintain a cover against grey scab and verrucosis on young fruit or foliage. For insect control oil, 1-160, or black leaf 40, 1-800, may be used. When using black leaf 40 alone, soap at about 3 lb. to 100 gallons should be added to improve the spread and adhesiveness. —G. H. McIndoe, Orchard Instructor, Gisborne, in "N.Z. Journal of Agriculture."

South Australia.

The third annual general meeting of the South Australian Fruit Marketing Association Incorporated, was held at Adelaide on November 6, 1931.

Present:—Mr. H. J. Bishop (President) was in the chair, and 50 members were present. Visitors included Mr. H. G. Colombie, Vice-President of the Victorian Fruit Marketing Association; Mr. G. Quinn, Chief Horticultural Instructor; Major N. P. Owen, Deputy Chairman of Overseas Shipping Representatives' Association.

Hon. G. R. Laffer, M.P., in opening the meeting, congratulated the Association on the work it had accomplished during the past 2½ years. As a grower himself, he realised what an important branch of primary production the Association represented, and he would always be willing to do anything in his power to assist the industry. He considered the Association had been fortunate in having Mr. H. J. Bishop as its President, as Mr. Bishop's energy and ability had been a big factor in the success obtained to date.

The President presented the report of the Executive Committee for the past year, Mr. H. N. Wicks submitted the report of the Research Sub-Committee, and the Secretary presented the Secretarial report and the financial statement, which were adopted.

Alteration of Rules.—The Chairman advised that the extraordinary general meeting of members had unanimously approved of the alterations of rules 9, 10, 11 and 12.

Mr. H. G. Colombie delivered an interesting and instructive address. He congratulated the Association on the progress made, and stated that large savings had been effected as a result of the combined efforts of the Associations in the different States. He dealt with the work accomplished by the Victorian Fruit Marketing Association, and also referred to the formation of the Australian Apple and Pear Export Council and the benefits that would probably be obtained in the future as a result of the coordination of the work of the different State Councils by the formation of this central body.

An interesting account was also given of the advertising campaign being conducted in England in connection with the fruit industry.

Major Owen, Deputy Chairman of the Overseas Shipping Representatives' Association, stated that the Shipping Association thoroughly appreciated the work that had been accomplished, particularly in regard to forecasting crops, and in endeavoring to bring about the use of the uniform case.

Mr. G. Quinn referred to the excellent work that the Association had done, and stated that during the past two years there had been decided improvements in the pack. He was very pleased to be able to attend the metings of the Research Sub-Committee, and he welcomed the work that was being carried out by members of the Committee, as the results obtained would be of great interest to his department, and assist to confirm the results they had obtained. He pointed out that the limited amount of money available made it a matter of great difficulty to obtain the necessary staff to carry out inspection in packing sheds, and to supply sufficient inspectors to supervise handling of fruit when being loaded at port of shipment.

Election of Officers.—Mr. H. J. Bishop was re-elected President, unopposed; Committee, the retiring members were unanimously reappointed—Messrs. G. A. W. Pope, P. R. B. Searcy, G. Selth, A. W. Pitt (representing the shippers), H. N. Wicks, F. B. James, M. G. Basey, J. B. Randell, J. S. Hammat, R. O. Knappstein (representing growers), and members of the auxiliary committee—A. O. Petersen, E. W. Dearman, G. Mack, R. H. Charlick, D. W. Hannaford, A. Filsell, and M. Vickers.

All the existing delegates were unanimously reappointed.

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

President's Report.

At the third Annual Meeting of the South Australian Fruit Marketing Association, the President, Mr. H. J. Bishop, presented his annual report, of which the following is a summary:—

Export and Levies.—The total exports of Apples and Pears during 1930 was 655,182 cases. Levies for that season were fixed at ½d. per case, paid in equal proportion by grower member and shipper member.

In the 1931 season only 30,309 cases were shipped, the levies being fixed same rate, and same basis. The export for this latter season is very disappointing, and shows the necessity of research work in respect to biennial cropping.

For next season it is expected that fairly large quantities will be exported, and the levy is again fixed at ½d. per case, payable ¼d. by grower and ¼d. by shipper member.

Pear Shipment, 1931.—An attempt was made to ship Williams Pears in small refrigerated and separate chambers to any other fruit. These were reasonably successful, and arrangements are in hand for shipments to go forward this season.

It was found very difficult to obtain the necessary separate and suitable freight space, as it is considered most desirable to ship Pears in small holds, apart from Apples.

Australian Apple and Pear Council.—The first Conference was held in Melbourne in December, 1930, and resolution was passed that it was desirable to form "the Australian Apple and Pear Council." At a second conference in September, 1931, the Council was formed. Representatives from each State attended and voted on basis of proportion to the quantities shipped.

The objects of the Australian Apple and Pear Council are briefly—by co-ordinating the general objects of the Fruit Marketing Association in each State, to use the combined influence for the good of the industry in all phases.

I am very pleased this Apple and Pear Council is formed, and at the meeting in September a very full agenda was considered.

Two delegates from South Australia are on the Executive Committee. The President is Mr. J. B. Mills, an experienced fruit shipper of Melbourne, and I can assure all present that Mr. Mills' services in connection with fruit freight arrangements to Europe, already place shippers and growers alike, under an obligation to him.

The S.A.F.M.A. Executive have all matters referred to them for consideration by the Apple and Pear Council, and instruct delegates accordingly.

One of the matters now being considered is—

Advertising.—It has been decided to make the collection at port of shipment of the ½d. per case which has for some years been collected at destination. The consideration of better devices for advertising, such as wrapping all Australian fruit with a paper printed with a universal Australian over-riding design.

The Commonwealth Government have agreed to subsidise the amount collected by a proportion of the £12,500 voted for advertising various Australian products.

Complaints of Rough Handling of Fruit.—Although there is a general tendency by many to treat fruit with some respect, there is still much room for improvement.

The inspectors, working at high pressure when examining fruit for shipment, cannot give all the attention desirable, and we ask the Government to arrange for special inspectors to constantly attend at ports of shipment during shipping season to protect fruit from rough handling, both on growers' or carriers' lorries, on the wharf, and also in ships' holds.

Inspection Generally.—We feel it is still desirable that experienced qualified inspectors continue to act in growing centres, and instruct, and see that fruit being prepared for export is packed according to regulations, rather than the inspectors at ship's side be compelled to cause serious loss to shipper and grower by rejections there.

As an instance of this, it is pointed out that through some abnormal conditions in 1931 season, numbers of stemless Apples were included in cases packed for export, and presented to inspectors at the wharf. These were rejected and caused much loss to all. Had the inspection and supervision asked for at last annual meeting been given by inspectors at packing centres, it is probable much better results would have been obtained.

I am firmly of opinion that the general average grower desires to pack fairly and correctly.

Freight to Europe, 1932.—The position is as follows:—The rate for 1932 represents the best possible arrangements to which the shippers can come, namely, 3/6 Australian currency, plus the advertised T.T. rate on the day the goods are shipped, less 7½ per cent. of such exchange. As long as the exchange remains at above 15 per cent., the said 7½ per cent. of the exchange will be borne by the different shipping companies; but if it fall below 15 per cent., the companies will pay half the exchange and the cost of exchange on freight will thus be equally divided.

The fact of the growers having organisations like the V.F.M.A. and S.A.F.M.A., which embodies the shippers, has been a big factor in protecting the interests of the industry, as all other commodities except refrigerated, pay the full rate of exchange on their freight.

An agreement is made between shipper and shipowner embodying this, and also includes the condition that dead freight must be paid if the fruit is not shipped.

Re Exchange, and Financial Position Overseas.—The constantly changing conditions general throughout the world make the shipment of any produce, and especially perishables, most worrying to all concerned, and I feel satisfied that even if for this alone, the formation of the S.A.F.M.A. justified itself, inasmuch as by speaking with one united voice better conditions have been obtained for the grower and exporter.

Forecasting.—It will be readily understood that to provide refrigerated vessels at South Australian port as and when required, to lift the very irregular exportable crop, it is necessary to forecast months ahead the tonnage required, so that ships can be placed in position to lift the fruit when ready.

This is most difficult, and requires from each individual member, especially growers, the most reliable information of crop prospects.

The forecast for 1931 was exceedingly difficult, as, although an off season, the blooming was prolific. Eventually, the figures supplied shippers were again reasonably accurate, but it is felt that South Australian trade suffered, inasmuch that no suitable space to lift the small quantity sold to Germany was provided. Admittedly it is difficult for controlling shipowners' interests (O.S.R.A.) to allocate suitable direct ships to lift so small a parcel, but I contend that seeing the percentage shipped to the Continent in 1930 equalled over 50 per cent. of the total, that some provision should have been made by the shipowners to cater for this trade in the 1931 season.

It was not practicable to ship all the quantity sold during the season at one time, and it is hoped that the O.S.R.A. will give Adelaide requirements for all ports greater consideration in the future.

To enable this to be done, growers must take their share of the responsibility and risk, and agree and definitely name as early as possible the quantities that they are prepared to export.

The shipping member must be protected, by the grower, in respect to the quantity to be shipped, and growers failing to ship the quantities agreed must be prepared to pay for the freightage not filled by them. Certainly the shipper member is not prepared to accept this responsibility.

Uniform Inspection.—Although I referred to inspection earlier, I wish to mention one aspect that causes concern to grower and shipper alike. It is in respect to uniformity of such inspection, and it is hoped that a uniformity of quality of various grades will be possible throughout.

It is felt that whilst everything must be done to uphold the quality of fruit exported, it would be advisable for a conference of shippers, growers, and working inspectors to be held, and all be given demonstrations and interpretations of what is required for such standard of quality as set out in the Commerce Act.

South Australian pack and quality had doubtless improved enormously since the inception of the S.A.F.M.A., and it is considered by many overseas authorities that it is now equal to any from the Commonwealth.

Standard Cases for Export.—The result of deliberation at the Apple and Pear Council Conference is that South Australia has declared itself as 100 per cent. in favor of what is known as "Canadian" shaped case.

In passing, I would mention that specifications for the manufacture of this case are uniform, and it is hoped that no inferior quality case will be shipped.

In Pear packages it has been decided to use half Canadian case, or if in trays that such will be of size and depth to suit the size of fruit, and yet will, when wired together, exactly equal the outside measurements of the Canadian Apple case. This will enable uniformity of both stowage and freight charges throughout.

Alteration of Rules.—An extraordinary meeting has been held, to so alter the rules that a member having once joined will not be asked to pay subscriptions annually.

The cost and difficulty of collecting such is felt to be disproportionate to the small financial gain. The finances of the Association will be controlled by levies on fruit exported.

Executive and Secretary.—I wish to place on record the very fine feeling of friendship now existing in the S.A.F.M.A., not only between your Executive and Secretary, but also between the grower member and shipper members generally. The closer we get together the better we understand each other's problems, and the harder we work to assist each other.

I ask growers to support loyally those shippers (and almost all are included) who are members of the S.A.F.M.A.

Very much entirely honorary work has been done by them for the industry, and they deserve that growers should reciprocate to the fullest extent.

Likewise, I ask the shippers to support the grower members of the S.A.F.M.A., so that as each progresses, it helps and assists the other. Our Secretary, Mr. Mills, has given splendid assistance, and I have also had hearty and loyal help from Executive Committee members.

Prospects.—I cannot close without reference to the prospects of the coming season. With wet winter and the fact that it was "the Big Apple Year," a forecast of 750,000 cases for export was suggested.

The very dry October and the ravages of thrips have reduced the crops of some varieties, and in some districts. The forecast is now approximately 600,000 cases for export. This may require revising again, and I repeat that each grower must assist his district delegate to the greatest extent, by providing accurate estimates.

Markets.—Whilst the exchange position is largely increasing values of exports, the abnormal position in Europe, and the fact that America has a largely increased surplus in cold stores, is seriously retarding sales.

Some small satisfactory sales are reported, but whether the market will recede or advance is assuredly an open question. Candidly, I cannot see any reasonable grounds for heavy speculations by European buyers at high figures.

Fruit Crop Prospects in South Australia.

Compiled by Geo. Quinn, Chief Horticultural Instructor, November 20, 1931

Apples.—This is the season when a normal crop of Apples was expected and the promise was for good yields. Amongst the principal varieties grown here, the earlier blooming kinds such as Cleopatra, Dunn's, Rokewood, Statesman, Stone Pippin, and Jonathan, have set from fair to good crops, the Jonathan being the poorest, and in some localities very light indeed. The later blooming kinds represented in this State by Rome Beauty, London Pippin, and Buncombe have, in most places, failed. This variation of setting would seem, for the first time in this State, to be definitely attributable to an epidemic of thrips, which very fortunately developed too late to impair the setting of the earlier flowering sorts. The present estimate is that the orchards in this State—considering the variations of settings in all districts—will range up to 75 per cent. of a good yield, and probably equal the statistical mean of the previous five years, which is quoted as 853,000 bushels.

Pears.—Reports for all districts indicate a good average crop. Amongst varieties, the Williams is most consistent. Bosc, Howell, and Josephine, show up well, but Glou. Morceau has shed most of its early promise. The total yield of Pears should approximate to 175,000 cases.

Apricots.—In the Murray River Irrigation Areas, the promise is for a fair average crop, and the same is estimated for the southern fruit districts. In the north, Barossa—the principal Apricot-producing area in the State—the frost almost destroyed the crop. On the whole, the yield of this fruit will be below normal, probably not exceeding 200,000 bushels.

Peaches.—The production of this fruit is declining in South Australia, owing to lack of markets for the drying and canning varieties. All districts report from poor to fair settings, and the aggregate will be less than an average of the past five years, probably reaching 100,000 bushels.

Nectarines are generally light and below normal, and will probably reach 20,000 cases.

Plums and Prunes.—The general reports from the District Horticultural Instructors is that these fruits are scarce and patchy, frost having dealt harshly with them. There will probably be half of a normal average crop of all kinds and not more than 75,000 bushels in the aggregate.

Cherries.—Early sorts are patchy; later kinds have a good promise, and in the principal district (Mount Lofty Ranges) the District Officer estimates the aggregate will be above normal, which is around 35,000 bushels.

Citrus Fruits.—After bearing a very heavy crop in most districts, these trees have not blossomed so freely as usual. It is somewhat early to predict the coming yield, which is likely to be slightly under that of an average year, which approximates to 420,000 bushels for all kinds.

Grapes: Drying Sorts.—In the northern Grape-growing areas—Barossa and Clare—a disastrous frost reduced the possibilities for a Currant crop to about 1/3rd of a normal yield, and considerably impaired the expectations for a good yield from the wine varieties. In the central or metropolitan districts, and south of Adelaide, no frost damage has been experienced, but at the time of writing, the thrips epidemic is severely threatening the setting of the blossoms. In the irrigation areas, all varieties promise a good crop, and no thrips damage has been anticipated.

Almonds.—The promise south of Adelaide is for a good average yield, and as this is the principal Almond-growing district, the crop, in the aggregate, should prove normal. Figs are promising; Quinces are looking like a good yield.

Tomatoes under glass are standing well and yielding good average crops. Gooseberries are showing about a 60 per cent. normal crop. Strawberries, owing to the long dry October—are poor, whilst Raspberries and Loganberries have been badly damaged by thrips.

EXPORT SALES IN SOUTH AUSTRALIA.

F.o.b. Prices Quoted.

The general manager of the Government Produce Department (Mr. G. A. W. Pope) stated to-day that since Mr. McCann has taken up the position of Trade Commissioner, he has been endeavoring to obtain reliable information as to the prospects in the overseas markets for the coming Apple crop, and is also negotiating for forward sales.

Dealing with the question of market prospects for Apples shipped on consignment, Mr. McCann states that as the present position is without precedent it is impossible to give reliable information, but that early shipments should meet good markets.

In dealing with the question of forward sales, he states that the uncertain financial position both in England and the Continent, makes it very difficult for buyers to operate with any degree of confidence, and consequently the offers that are being made seem comparatively low, but it must be understood that the risks as to markets and exchange are more than ordinarily great this year.

The Department, however, has been successful in making the following sale:—Prices quoted per case f.o.b.—3,000 cases Cleos., 8/-; 2,000 Dunns, 8/-; 5,000 Jonathans, 7/-; 2,000 Romes, 7/-; 1,000 Stone Pippin, 6/6; 1,000 London Pippin, 6/6; shipment during March-April, and payment in Australian currency.

At the above prices growers will receive fair values, but it is yet too early to definitely state that similar prices are to be expected for the balance of the season, although every effort is being made to obtain further offers.

Drying Stone Fruits.

Apricots, Peaches, Nectarines and Plums.

(A Paper read by Mr. A. Rogers at a meeting of the Clare Branch of the South Australian Agricultural Bureau.)

THE QUESTION OF PREPARING stone fruits for drying presents many difficulties to laying down hard and fast rules. For instance, fruit grown under dry conditions needs somewhat different treatment from that which has developed under ideal conditions. First in order, and perhaps the most important, is the Apricot. Excellent fruit can be spoilt by careless handling, whereas very ordinary fruit can be brought up to a good marketable article with scientific methods.

Allowing that we have well-grown Apricots to start on, the first question is, "In what stage of ripeness should they be picked?" The term "eating ripe" is generally used, but that permits a deal of variation, from practically green, to mushy ripe, according to taste.

The Apricot should be left on the tree so long as it can be handled without crushing in the containers. If petrol tins are used, I prefer to open on the sides; it gives a greater surface and does not damage the fruit so readily. Different methods of

splitting the fruit

in question can be used, but most in favor is the passing of a sharp knife around the sutural line, being careful that the whole of the flesh is cut—not torn—in the operation. The even cut prevents the loss of syrup during sulphuring, and adds to appearance.

The fruit should be opened and transferred to the sulphur-box as quickly as possible. Where practicable, overripe fruit should be discarded or sulphured separately. Overripe fruit absorbs sulphur-dioxide more readily than firm, and if sulphured together, gives an unsatisfactory product. Unripe fruit that may have been accidentally picked may be improved by stacking on trays for a day or so, but this will not make a top-grade product.

It is recommended that fruit should be stacked from the bottom upwards in the order in which it is cut. Freshly cut fruit absorbs sulphur-dioxide more readily than that opened some time prior to sulphuring. This arrangement of stacking allows the dried fruit to be in contact with the maximum density of warm sulphur fumes, thus tending to uniform sulphuring results. While this might be good, I would rather depend on spraying the fruit with clean water. On a hot drying day I

spray each tray of fruit

as it goes into the stack, giving the first pitted the heaviest spraying. I also spray the stack when completed, as well as the ground around, to create a humid atmosphere. Lower the hood immediately and fill around the bottom with damp sand. If possible, trays with a smooth surface should be used in order not to mar the surface of the fruit. If anything special is required, dry on glass. Trays should be hosed before fruit is placed thereon.

Type of Sulphur Chamber.

Many types of sulphur chambers are in use, but most in favor is the movable hood. They hold an advantage, in that the large sulphur-house takes so long to fill, and if not full, makes the sulphuring more difficult to gauge. Any number of hoods can be used, and they are not very expensive to build. The hood I have in use has an air space of 70 cubic feet, taking 17 5 ft. x 2 ft. trays, carrying 3½ cwts. of split fruit. For the frame, I used 3 in. x 1½ in. oregon (joiner's) and covered these with pressed paper. I have had this in use four seasons, and find it stands the sulphur fumes very well. It makes a hood practically airtight and no vent hole is needed with the method of sulphuring I employ.

Preparing Sulphur for Burning.

The method often followed is to place coals of fire in a pan, and throw on a given quantity of sulphur.

Sulphuring Apricots.—The regulations in force here and in England regarding the amount of sulphur-dioxide permitted in dried fruit, makes it necessary to keep it below 14 grains per pound and still provide a marketable product and of good color. The accepted quantity of sulphur is from 6 lbs. to 8 lbs. per ton of pitted fruit, but the weather conditions make a little difference. On a cold, windy day a little more sulphur is needed than on a hot, sultry day. That difference, however, is usually corrected by the length of exposure. For sulphuring I have a pit immediately under the trays about 18 in. deep with a channel leading to the outside of the sulphur box, and covered, forming a trap door for convenience in attending to the sulphur-pan. I use 1½ lbs. of prepared sulphur to 3½ cwts. of pitted fruit, putting in half when closing down, and the remainder two hours later.

Period of Exposure.

Under average summer day temperatures four to six hours should be sufficient to preserve the color without over-sulphuring On very hot days, four hours would be long enough. The practice of leaving the fruit in the sulphur chamber over night is not advocated. It may result in over-sulphuring. Also, if left in over night you may find that the syrup (with which the cups are partly filled, and in some cases completely filled), instead of being quite clear, is covered with a milky sulphur residue. When the fruit is not taken out before night, I make a practice of raising the hood a few inches to allow the fumes to escape. If there is any suspicion of over-sulphuring, the sulphur-dioxide content may be reduced by stacking trays for a day or two. Upon removing from the sulphur chamber, I spread out the fruit for a day to dry up the syrup and make the color secure, after which I prefer to dry in the shade.

When the fruit is dry enough to remove without damaging, three or four trays may be put in one, and again stacked up to finish drying. In that way you have less trays in commission. Fruit such as Apricot, Peach, Nectarine, and Prunes that is to be stored and dressed later I allow to become very dry. In that state, it can be immersed in a boiling dressing for a longer period and so destroy any eggs, larvae, or more advanced stage of fruit grub.

Other Advantages.

It is possible to sweat and pack such fruit straight away, whereas fruit on the damp side might have to be put out again to dry. This is to be avoided, for the sun takes off the gloss. Some growers seem to think too much weight is lost by thoroughly drying their fruit, but it is surprising how little moisture it takes to bring it back to a nice, pliable condition. After all, it is sugar that makes for weight. Peaches and Nectarines are treated in much the same way as Apricots. All dust should be removed from Peaches, and, if necessary, hosed before opening.

Of Nectarines, the Goldmine is the most favored. Well-shaded fruit without much blush is to be preferred for drying, but the point should be stressed that Nectarines of all other fruit must be allowed to ripen on the tree, otherwise they wilt and become bitter.

As a special when the Nectarines are opened, put a little sugar in each cup before going into the sulphur chamber. Care must be taken to keep fruit so treated away from ants whilst drying. Nectarines treated in this way and dressed supply an excellent adjunct to the list for dessert. For cooking, we again come to the point of being ripe to facilitate the removal of the skin I do not know if the practice of removing the skin is general. If not, I make the following suggestion:—Put fruit in saucepan, over which pour one quart of boiling water, add one teaspoonful of carbonate of soda, put on lid, and stand aside for 20 minutes, when skins can be easily removed; after which cook as desired. Unripe fruit does not respond so well.

Treatment of Prunes.

Treatment of Prunes is far more simple. The lye for dipping is usually 1 lb. caustic soda to 25 gallons of water for well-grown fruit. In the case of Prunes grown under droughty conditions, which tends to make the skin tough, more caustic soda should be added.

I prefer to add more caustic soda rather than dip for a longer period to obtain the desired amount of cracking of the skin. The dip should not be allowed to go off the boil. Another practice is to prick the surface of the fruits. To do this latter, pricking boards are used. A shute is made, and the bottom is evenly covered with plaster of paris, and while it is yet soft, pins are placed in it so that about one-quarter of the point projects upwards. They must be close enough to prevent the fruit from lodging between them. The Prunes are allowed to run down the shute on to the trays and are then ready for placing in the sun. The practice of dipping is most in favor. D'Agen should be left on the trees until they will shake down, but they will not respond well to dipping if left lying in the hot sun for any length of time.

Robe de Sargent and Splendor especially should be picked off the trees to obtain good results in dipping. My experience with Splendor has led me to consider that a light dip is most satisfactory. Severe cracking of the skin on Splendor Prunes allows too much of the pigment to come out, and results in a russet color when dry. If yellow Plums are being dried, they should be subjected to sulphur fumes for about eight hours after dipping to preserve the bright golden color of the fruit. After dipping the Prunes and Plums, spread out to dry off, then stack up and finish drying.—South Australian Journal of Agriculture.

SOUTH AUSTRALIA.

At the monthly meeting of the Executive Committee of the South Australian Fruit Marketing Association, grower members reported on the prospects of the Pear crop as under.

M. G. Basey, Cherry Gardens—Duchess good, other varieties light.

R. O. Knappstein, Clare—Medium to good crop.

R. B. Pritchard, Cudlee Creek—Generally good.

J. S. Hammat, Williamstown—Duchess good, others light.

H. N. Wicks, Balhannah—Medium and heavy.

A. O. Peterson, Upper Sturt—Duchess good, others heavy at present.

F. B. James, Blackwood—Crop less than last year.

J. B. Randell, Gumeracha—Duchess good, others medium crop.

Space estimated:—January 2,000, February 6,000, March 1,000.

Overseas Committee.—Messrs. George Wills & Co. Ltd., submitted a list of companies for inclusion in the Overseas Committee, and other shipper members undertook to supply their lists to the Secretary in due course.

Research Sub-Committee.—Mr. R. O. Knappstein reported on behalf of the Research Sub-Committee that the Waite Research Institute had taken up the matter of the thrips pest, and were hopeful of discovering an effective remedy. Growers reported that extensive damage had been caused by thrips.

Codlin Moth Control.—Experiments being carried out by members of the Committee were proceeding satisfactorily, and it was hoped useful information would be obtained in the near future.

Mr. H. N. Wicks advised that trees that had been treated with nitrogenous manures (6 lbs. per tree) were showing excellent results as compared with others untreated.

Experiments were also being carried out by some members in connection with non-cultivation in orchards, and members reported that interesting results had been obtained in non-cultivated areas.

Forecasting Crop.—It was resolved to advise the Secretary of the Export Oversea Transport Committee that the estimate already supplied of 600,000 for the coming season would probably be correct, but the estimate might have to be revised owing to the ravages of thrips.

Fruit Shipments
United Kingdom
and the Continent

W. D. PEACOCK
& CO.
London Fruit Exchange,
Spitalfields, London, E.1.
AND HOBART, TASMANIA
Solicit Consignments
The High Standing and Long Experience of this Firm is a Guarantee that the Best Interests of Consignors will be conserved.

F. W. Vear PTY. LTD.

Fruit & Vegetable Salesmen
Commission Agents
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Highest Market Rates Assured
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Specialists in Australian Fruit.
Solicit consignments of Apples, Pears, Etc.
Our record of over 30 years' standing in the handling of Australian fruit, with satisfactory results, is a recommendation for growers to ship their fruit to our house.

Representatives—
International Fruit & Mercantile Company Ltd., Melb., Vic., Australia; and A. J. Walshe & Co., Hobart, Tasmania.

Queensland.

Gympie (16/11/31).—The output of fruit from the Gympie district for the month of October showed a slight falling off, owing to the dry weather which delayed the filling and ripening of Bananas.

The following were despatched:—2,200 cases Bananas, 1,560 cases Pineapples, 390 cases Pears, 730 cases Papaws, 5,300 cases Beans, 900 cases other fruits, and 320 cases Cucumbers.

The Railways Department has notified that Tomatoes are now to be classed as fresh fruit: canned Tomatoes as preserved fruit.

Control of Factory Fruit.

The Committee of Direction of Fruit Marketing has given notice of intention to issue a direction for controlling the sale of all deciduous fruit and Passion Fruit for factory or juice purposes, the direction to remain in force for 12 months from January 14, 1932, for deciduous fruits and until November 5 for Passion Fruit.

Pineapple Pathologist.

The Pineapple Sectional Committee and the Minister for Agriculture (Mr. Walker) have come to an arrangement whereby Mr. Lewcock has been appointed Pineapple pathologist. All centres will be visited: growers experiencing trouble should notify Mr. Lewcock promptly.

Trade With Canada.

Mr. W. Ranger, Manager of the Committee of Direction, considers that Canada offers good prospects for the marketing of certain Queensland fruit, the most important being canned Pineapples. About 600,000 cases each of 2 doz. tins were imported into Canada last year, about two-thirds coming from Singapore: as these tins sell at about 5d. each, it will be difficult for Australia to compete. Over 160,000 cases were imported from Hawaii. Mr. Ranger is of the opinion that Queensland canned Pines should displace the Canadian article entirely. Owing to the favorable exchange, and the terms of the Canadian-Australian trade treaty, our Pines can be sold below the Hawaiian article. Canadian sentiment is very favorable to Australia. Queensland can look forward to a trade of 100,000 cases per year, and this should subsequently mean an increase of Pineapple acreage.

There are good prospects in Canada for our Grapes—especially in Eastern Canada, if transport facilities are adequate.

Australia should capture portion of Canada's huge market—worth £2,000,000—for Oranges.

It is anticipated that some form of Empire preference will follow the result of the British elections.

The Productive Gympie District.

Fertile soils, a generous rainfall, and equable climatic conditions have made Gympie the principal Banana-growing district of Queensland. The area under Bananas is 5,247 acres, with an estimated production of 1,456,000 bunches, the next highest district being Maroochy with 1,521 acres, producing 408,357 bunches.

Central Packing Shed.

The Gympie Fruitgrowers' Association is conducting experiments with Banana packing and marketing under a brand. Mr. Gregory, fruit packing expert of the Department of Agriculture, will supervise the packing work.

* * * * *

The Summit (16/11/31.—Messrs. A. H. and A. E. Paget, of "Glen Aurie" Orchards, The Summit, Queensland, advise as follows:—

Re crop prospects—with the exception of Peaches, the crops are generally good.

Apricots.—Newcastle, Oullin's Early, Early Moorpark, Royal, Tilton and Trevatt, crop heavy.

Apples.—Early sorts, heavy. Gravensteins and Delicious, failure to medium. Jonathans, King Davids, McIntosh Red, Dunns, and Granny Smiths, good, to heavy. In some orchards the crop is so heavy that thinning out is in full swing.

Plums.—Japs., Wilsons, Santa Rosa, Beauty, Burbank, Climax, crop good. Re English Plums—most growers have pulled them out owing to the unsatisfactory returns; what blocks are left carry a very heavy crop.

Pears.—Clapps, W.B.C., Packham's, Bosc's, generally heavy crop.

Peaches.—Not many grown, crop very light.

* * * * *

New Plantings.—During the last three years there have been plantings mostly with Jonathans, Granny Smiths, and Lalla (Red Delicious).

Nearly all unpopular sorts of Apples have been top worked.

Packing House.—The packing house, built by the Committee of Direction, is already well booked up, over 5,000 cases of Apples are to be exported to England by first and second boat in February.

Granite Belt Jonathans and Granny Smiths, owing to being so early, should hit a good market overseas.

Thrips.—Thrips have been with us, fortunately, for some reason, they have never been so plentiful as to wipe out a crop yet. However, they do a certain amount of damage.

Some eighteen years ago a Dr. Bottrel (a German), stayed with us, he used a gas, which drifted through the orchard with the wind. He was trying to poison the woolly aphis, certainly the wolly aphis cast all their

Do not run any Financial Risk with your Fruit
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FRUIT EXCHANGE——————BRISBANE

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Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.
Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

wool, and got very uneasy, but the gas didn't kill it. It was most noticeable that cicadas, with which bush trees were covered, cleared after the gas had been released for about an hour; the "Rutherglen bug" disappeared also.

I have often wondered if something of the same nature would hunt out the thrips?

Green Manure.—Very fine crops of field peas and barley were grown last autumn and winter—in some cases as high as the fences. They are just the thing in this light granite soil.

Manure.—Most orchards apply some: a complete manure is generally used, at the rate of 5 lbs. per tree. Potash is being more largely used.

The Stanthorpe District.

Fruit Crop Prospects Generally Good.

(By a Special Correspondent.)

Personal observations and careful enquiries indicate that notwithstanding some losses due to the effect of late frosts in some areas, there will be on the whole a good average crop throughout this district.

Apples.—The principal varieties grown are Gravenstein, Jonathan, Delicious, and Granny Smith. With the exception of Delicious, these have "set" well, and promise a good to heavy crop.

Pears.—Medium to good, chiefly Williams and Packhams.

Peaches.—Light to medium.

Plums.—English varieties are light to medium. Japanese are good to heavy. Many varieties are grown, but Wilson, Shiro, Santa Rosa and Burbank, are the most important.

Vegetables.—Large quantities of cabbage, peas, beans are already being marketed and weather conditions have been ideal for these crops.

Tomatoes.—Large areas are being planted this season.

Grapes.—On the whole, quite satisfactory, although here and there some vineyards sustained some damage from frosts.

* * * * *

Prospects generally are bright, and thrips has not made its appearance. Most orchards are being well cultivated and the practice of ploughing in green cover crops is taking on. The Committee of Direction intends establishing a packing house in the Amiens district, and also one at Glen Aplin (for export Grapes).

* * * * *

There has been a considerable increase in plantings this season, chiefly Apples. Unfortunately a considerable percentage of trees supplied by some southern nurseries was very inferior. Growers are now determined to accept only the best available.

* * * * *

Stanthorpe.—Mr. H. M. Jones sends the following information under date November 17.

This district grows Apples, Pears, Plums, Peaches and Grapes to perfection, that is if the ground gets its proper treatment and our Apples and Pears come in ten days earlier than the southern States, and generally with a better color and as good a quality.

The principal varieties are, viz.:—

Apples.—Gravenstein, Jonathan, Delicious, Dunns, Granny Smiths.

Plums, Japs.—Wilson, Beauty, Shiro, Santa Rosa, Burbank.

Plums, English.—Black Diamond, Grand Duke, Ponds, President.

Peaches.—Mayflower, Briggs, Triumph, Wiggins, Elberta.

The coming crop is to my mind two-thirds to three-quarters of a normal crop. We are carrying good moisture, and the fruit is going to fill up well. The Apple and Pear crops in the northern end of the district are from fair to very good, but patchy in the southern end, due to, I think, a cold wind on October 18, as the Apple trees flower a little later in the southern end, and it looks as if the cold got them at a touchy time. Also, some of the Peaches are patchy. But up to date, thrips are not playing havoc with our fruit crops.

The Grape crop promises well, with a profitable export market.

This district also grows vegetables extensively during the summer months, especially Tomatoes for Queensland and sometimes N.S.W. markets. Also a little tobacco of the bright light leaf quality.

I would be pleased if you would open up a discussion or give the latest treatment and prevention of armillaria of the Peach—that is, root rot.

PASTE FOR FRUIT CASE LABELS.

In response to inquiries, we have pleasure in publishing the following formula for mixing paste suitable for sticking labels on fruit cases:—

2 lbs. flour (ordinary), 4 pints water, 2 tablespoonfuls alum (ground).

Mixing.—Place the flour into a suitable vessel, add some water till the contents are a thick, creamy substance, whipping with the hand, and add at the same time the alum; take care at this stage to beat out all the lumps which are formed by the flour.

Boiling.—Place the above contents into a vessel for boiling. Pour the four pints of water (boiling) on to the mixed flour, slowly stirring all the while, keeping in one direction. When the contents start to bubble the process is finished. Use when cold.

Should the paste be too thick, dilute with cold water. The paste can be made to any consistency by varying the quantity of boiling water when mixing.

This paste, we understand, is being satisfactorily used throughout Victoria. We are told that some of the large packing sheds place a quantity of labels in a receptacle of water, and paste the end of the case instead of the back of the label. The labels are removed from the water and placed, wet, on the pasted end of the fruit case.

We shall be pleased to receive comments from readers who have had experience with other methods.

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Tasmania.

State Fruit Advisory Board Meeting.

Important Matters Discussed.

AT a meeting of the Tasmanian State Fruit Advisory Board held at Hobart on November 5 there were present Mr. B. J. Pearsall (Chairman), Hon. W. H. Calvert, Messrs. B. H. Saunders, H. J. Astell, A. H. Weedon, P. H. Thomas (Chief Horticulturist), F. Harrison, and the Secretary, Mr. A. J. Honey.

Shipping Charges.

Mr. E. Ross, on behalf of the shipping agents, advised that the Hobart and Launceston shipping agents had considered shipping charges, and it had been decided to introduce the following scale for the 1932 season:—

	Per case.
First 1,000,000 cases	3d.
Second 1,000,000 cases	2½d.
Thereafter	1½d.

An adjustment would be made to growers when the total quantity exported was known. As regarded shipments from the Tamar the same scale would apply, subject to the direct shipments from the North being not less than 250,000 cases. The agents estimated that the reduction represented by the scale would be not less than 20 per cent., and in all likelihood 25 per cent. of the flat rate of 3d. a case. It was mentioned that in New Zealand this season one of the items which, with others, corresponded to the Tasmanian shipping charge, was increased by the New Zealand Control Board.

On Mr. Harrison's motion, it was decided to ask the shipping agents to make a flat rate.

Canadian or Dump Case.

A letter was read from the Associated Selected Representatives in Sydney, stating that it had been mentioned that steps were being taken to extend the use of the Canadian bushel case for Tasmania. Fruit sold best in dump cases.

The Chairman said that both the Canadian and Tasmanian dump cases were allowed, and the Board had always advocated the use of Tasmanian timber. The advent of several case timber seasoning concerns would bring the Canadian case within the reach of many growers.

It was decided to advise the Sydney Selected Agents that the two types of cases had been adopted, and that the Board advocated the use of Tasmanian hardwood material.

Fruit Delegation for England.

A letter was received from the Australian Apple and Pear Export Council, setting out the details for the proposed fruit delegation for England.

It was decided to obtain further information regarding the proposed method of appointing delegates: it was suggested that the expenses be met out of the advertising fund. Further discussion was deferred until after the conference with the Minister for Agriculture (Sir Walter Lee) regarding the statutory powers of the Board.

Refrigeration and Transport.

Fulfilling a suggestion from the Australian Apple and Pear Export Council, it was decided to set up a Refrigeration and Transport Committee. Hon. W. H. Calvert and Messrs. Pearsall and Thomas were appointed.

Reduction of Consolidated Charges.

A reply was received from the Tasmanian Overseas Fruit Salesmen and Brokers' Representatives' Association to representations from the Board that members of the Association should urge their principals to cut down consolidated charges. The Association pointed out that as the question affected the whole of the exports of Apples and Pears, it was suggested that the matter should be placed before the Australian Apple and Pear Export Council. Every member of the Association, however, had agreed to approach the firms they represented with a view to having the consolidated charges reduced.

The letter was received.

Tariff Reduction Desired.

The Premier (Hon. J. C. McPhee) wrote in reply to a letter from the Board stating that it was doubtful if the Loan Council had any standing as regards the desired reduction in Customs duties and reconstruction of the tariff, but he would bring the matter forward.

Sales Tax Exemptions.

In reply to a letter from the Board the Secretary to the Federal Treasury wrote stating that the Board's request that fruitgrowers and producers' requisites be exempt from the sales tax had been noted for consideration.

* * * * *

Statutory Powers for Advisory Board.

Premier Asks for More Details.

The Tasmanian State Fruit Advisory Board conferred with the Minister for Agriculture (Sir Walter Lee) regarding the Board's desire for statutory powers.

The Minister, in reply, stated Cabinet felt that the desires of growers were somewhat vague, and that before full consideration could be given it would be necessary to outline them in detail. At his suggestion, it was agreed that the Board should set out in detail the trend of the extended powers which it was thought might be required.

Classified Advertisements.

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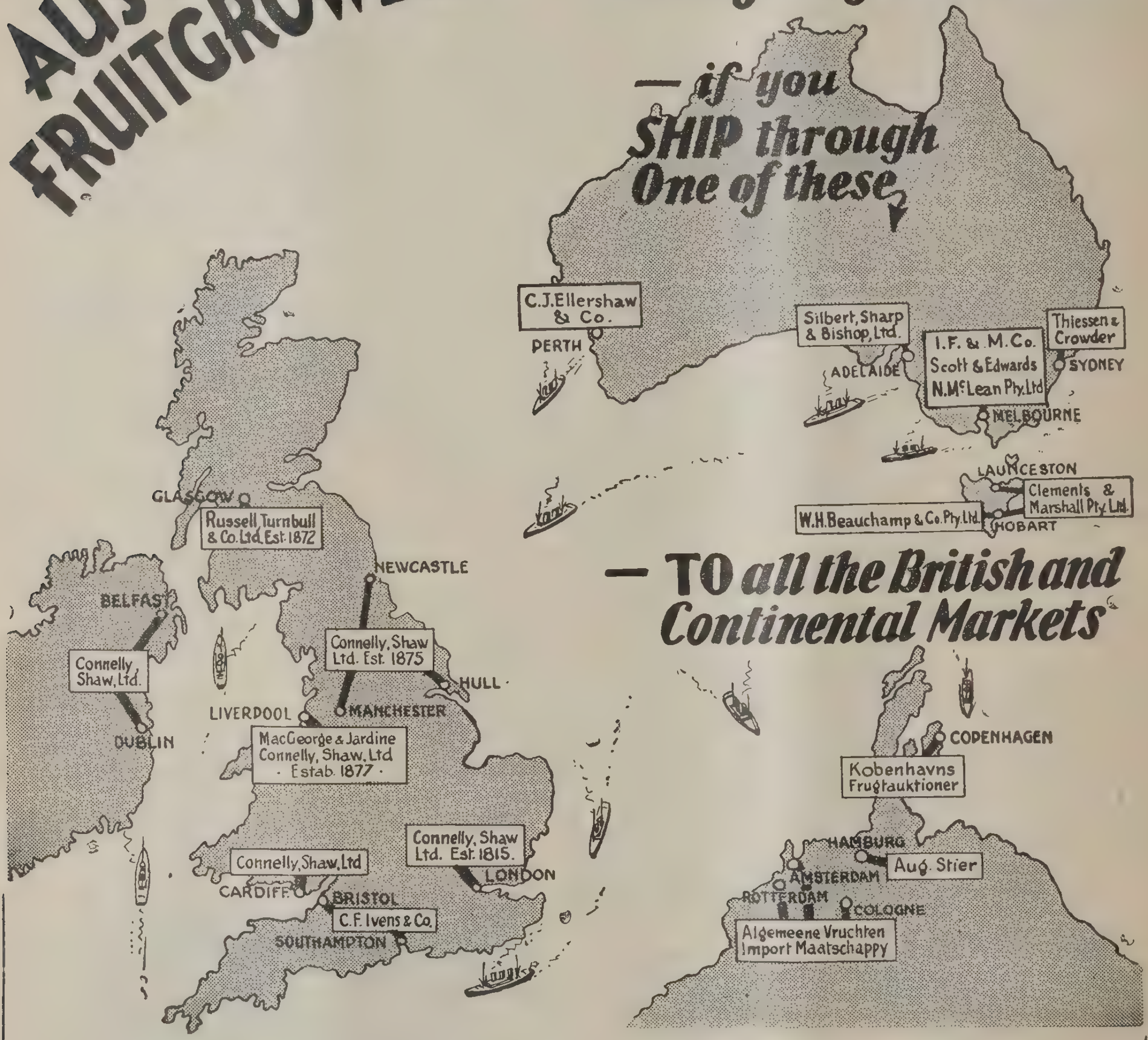
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Deputation from Fruit Brokers.

A deputation from the Tasmanian Fruit Brokers' Association, consisting of Hon. T. Murdoch, M.L.C., Messrs. Burgess, Foster, and Wise, placed before the State Fruit Advisory Board certain proposals for the betterment of the fruit industry, particularly in relation to oversea freights and other charges.

The Board went into committee to consider the proposals, and it was decided to defer taking action until next meeting, to be held at Launceston.

Ranelagh (22/11/31).—Mr. Thos. A. Frankcomb, Clifton, Ranelagh, Tasmania, advises as follows:—The principal fruits grown in the Huon district are Apples and Pears. Apples, I should say are likely to be about 10 per cent. above last year. S.P.M. and F.C. are somewhat patchy, all other varieties are good. Pears are very light, from what I can gather they are somewhere in the vicinity of 30 per cent. of last season, that is in the Huonville district.

All fruits will benefit from the recent rains, which were most opportune, and the quality of the fruit is likely to be exceptionally good.

Scottsdale (20/11/31).—This is principally a dairying district on rich chocolate soil, but there are upwards of a dozen commercial orchards at present producing about 30,000 bushels of Apples and Pears for export overseas and interstate.

The principal varieties are:—

Apples.—Jonathan, Sturmer, Cox, Lord Wolsley, W.Pm., Dunns, F.C., F.C.P., and Delicious, with recent plantings of Democrats and Granny Smiths.

Pears.—W.B.C., Coles, Beurre Bosc, Clairgeau.

After a heavy winter rainfall, following a moderate crop last season, practically all varieties carried a heavy blossoming, particularly Jonathans. Although there is a distinct shortage of bees about this spring, the weather conditions during the whole of the blossoming period were ideal, and practically all varieties of Apples and the W.B.C. Pears have set well, but other varieties of Pears only fair to light.

After some delay, due to the wet winter and early spring, cultural operations are now well advanced, and the trees look exceptionally healthy It is the usual practice here to spray at the "green tip" with Bordeaux and red oil, and at the "pink" with lime sulphur. This is found to control effectively black spot and red spider, and produces clear-skinned fruit of good color.—G. McGowan, Hon. Sec. Scottsdale Fruitgrowers' Association.

Winkleigh.—Mr. Neil Campbell, M.H.A., writing under date November 21, advises that there appears to be a good crop of all varieties of Apples in sight in Winkleigh (Tamar) district. Experience, however, has taught that anything may happen up till about the middle of January. Pears appear to be light.

There is a general movement here towards the use of an improved hardwood case for exporting fruit.

Huonville (18/11/31).—Mr. D. F. Calvert advises as follows:—

The prospects for the coming crop seem very good in this district. I think, on the whole, it will be larger than last year, especially Cleo., of which there is a very good crop.

Our own crop will be more than double last year's.

The Pear crop will be light as a lot of varieties set very well, but are beginning to thin out a lot.

We have just had a fine rain—will do a lot of good, although it may cause the black spot to develop—up to the present they are exceptionally clean.

RECORD CROPS IN TASMANIA.

Everything points to a record crop.

A preliminary estimate for export is over 2,500,000 cases.

QUICK DISCHARGE OF FRUIT.

Excellent Facilities at London.

An excellent performance was recently noticed when the Union Castle chartered steamer "Murillo," took to London from Cape Town more than 100,000 packages of Oranges and other South African citrus fruits. The vessel berthed at West India Dock and was completely discharged in 28 working hours this is equivalent to over 3,700 packages per hour. The peak time was on the second day, when 37,000 packages were discharged in eight hours. There were in the cargo 300 different shipments, each requiring to be kept separate for delivery to the consignees; so expeditiously did work begin on the cargo of the "Murillo" that the first load was at Covent Garden within an hour and a-half of leaving the steamer's refrigerated chambers, and loads placed on the rail for provincial centres were despatched to their destinations in quick time.

London has maintained its position as the chief centre of the Australian and New Zealand fruit trade. Besides its own vast population, London supplies most of the seaside resorts. Very large numbers of tourists make London their headquarters and want the best of all produce.

The Quick Manufacturing Company state in their advertisement in this issue that by using a "Digger" winch, a man can uproot more trees and stumps in a day than he would dig out in 10 days. Catalogue is obtainable on request to the Quick Manufacturing Company, 75 Penders-street, Thornbury, Vic.

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WIRE STRAPPING CASES.

The advantage of having wire strapping on cases filled with fruit is steadily becoming more recognised.

The Gerrard Wire Tying Machines Co. Pty. Ltd. has performed good service in this connection, not only in demonstrating the utility of their machines, but also in conveying accurate and helpful information on fruit packing throughout Australia.

The Gerrard Company has recently issued a packing chart giving accurate, detailed information for the packing of Apples in the standard case for home and export markets. This chart deals specifically with the following varieties of Apples—Jonathan, Cleo., Granny Smith, Yates and Dunns, and applies to Apples of similar shape.

Four slogans are set out as follows:—"Pride in Your Pack," "We Must Deliver the Goods," "Empire Preference for the Fruit that Deserves It," "Save Money by Spending for Safe Transport."

Hints are given on the right and wrong way to apply the Gerrard wire-seal strapping to cases of fruit. If using standard cases, these should not be strapped on the bulge nor should they be strapped two to three inches in from the ends; if using dump bushel cases they should not be strapped several inches from the ends (as has so often been done in the past) nor should they be strapped on the top.

After thoroughly testing out the new No. O-DS wire-seal strapping for fruit cases the Gerrard Company recommends its use, but if any grower definitely prefers the No. 1 soft strapping as previously supplied, it is available for the 1932 season.

The firm is offering this new O-DS strapping at reduced prices also there is now a lower rental and service charge for the Gerrard model B machine. It is estimated that the whole process works out at less than 1d. per case with which the grower can safeguard the product of his years work in the orchard.

The services of the Gerrard Company have been made fully available to the fruit industry of Australia in all its branches—deciduous, citrus, canned and dried. Copies of the valuable packing chart referred to are available on application to the company at 119 Hawke-street, West Melbourne, Victoria.

PINK LEMONS IN CALIFORNIA.

A pink fruited Lemon tree has been discovered in California: it is presumed to be a bud sport from the variegated Eureka Lemon tree: as the fruit approaches ripeness it develops a pink color in the rind, flesh and juice.

Tests are being made to see if this sport can be fixed; budwood has been inserted in other stocks and results will be awaited with interest.

The tendency of citrus fruits to produce striking bud variations is thus again illustrated, state experts in the Department of Agriculture.

Guider Fruit Graders.—Orchardists who are requiring a grader to handle the coming season's crop will be interested in the new models of the Guider fruit graders. Full particulars and price can be had on application to J. L. Holland, Box 57, Shepparton, Vic.

South Australia anticipates having 600,000 cases of Apples and Pears for export this coming season.

Empire Preference

—is now more than a political catch-phrase. It is business in £ s. d., and Australia can build trade on the markets of the Empire that will bring in the tide of prosperity. We must not expect the full benefits of tariff preference unless we meet the requirements of the Empire buyer and deliver the right goods packed in the right way.

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Batlow.—Mr. H. V. Smith, general manager, Batlow Packing House and Cool Stores, advises as follows under date November 21:

Pears will be very light indeed, in many orchards a complete blank, except W.B.C., which have set fairly well, although only carrying a light blossom. Packhams, Coles and Josehpines failed to set.

Apples.—Jonathans, a fair crop; Grannies a fair crop where situated alongside Jonathans, and the pollination has been good; where planted in blocks, very few indeed; Democrates, hardly any; Delicious, hardly any; London Pippins, a few.

There was a heavy blossoming in all varieties—we anticipated handling about 150,000 cases of the district output of about 180,000—estimates to hand show about 30,000 to 35,000 cases, but probably there will be between 40,000 and 50,000. The setting is therefore from 20 per cent. to 25 per cent. of normal.

For this the heavy "thrip" infestation is to blame. Some growers sprayed continuously, white oil and black leaf 40 being used, with very little result indeed. Certainly the result was nothing to justify the heavy expense incurred.

A deputation recently waited on Mr. Parker Moloney from this district, and pointed out the urgent necessity for scientific investigation of the "thrip" pest. Undoubtedly it is the most serious menace to the industry that exists, and no progress whatever appears to have been made in control measures.

We understand that all the Victorian fruitgrowing bodies have moved in a similar direction with regards the necessity of investigating the "thrip."

Pennant Hills West (19/11/31).—Mr. Jas. King reports as follows:—

Main Fruits Grown.—Citrus: Valencia and W.N. Oranges, Mandarins, Lemons. Apples: G. Smith, Jonathan, Carringtons, Nelson, etc. Plums: Shiro, Wilson, Santa Rosa.

Valencia and Navels show good setting, Mandarins medium; the latter, I think, are affected by the thrips. Lemons, good setting, but all citrus uncertain as fruit has only just set.

Apples practically a washout—through thrips. G.S., total failure other Apples, sprinkling.

Plums—Shiro, a failure; Santa Rosa, medium crop; other Plums largely affected by thrips.

Trips have made in most cases (except very early fruit) a total failure. One orchard usually 3,000 cases Apples, not 100 this year.

DISPLAY OF GLASSHOUSE TOMATOES.

An excellent display of glasshouse Tomatoes was made early in October in the windows of David Jones Ltd., George-street, Sydney. About sixteen varieties, all grown under glass, were included, together with several cases packed ready for transport. The new cardboard containers were employed for the packed Tomatoes.

Placards pointed out that whereas four years ago there were no glasshouses in N.S.W., there were now 450, with an output between August and December of a million pounds of Tomatoes.

All the Tomatoes shown were of excellent size and color, and excited favorable comment from the large crowds of passers-by, who stopped to inspect the display.

OBITUARY.

The death occurred on October 12, at Windsor (N.S.W.), of Mr. S. A. Tuckerman, at the age of 70 years. He was one of the most successful orchardists on the Hawkesbury River, along which he owned large tracts of orchard country. Although born at Ipswich (Q.), the late Mr. Tuckerman had lived the greater part of his life on the Hawkesbury.

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NEW SOUTH WALES.

After visiting districts in New South Wales, Mr. H. J. Rumsey, Dundas, N.S.W., writes as follows under date November 15:—The fruit outlook is not bright. Cherries are such a small crop that growers are advertising in the Young paper that they will not want pickers this year. At Orange and Goulburn the crops were very light. I went through one Prune orchard of six acres at Maimaroo, near Young, and could not find six Prunes to a tree.

Apples were as bad; Pears escaped the devastation, Williams in particular, but one orchard at Tallong, and one at Penrose report total loss of these by hail.

The general opinion seems to be that something more than thrips is responsible for the complete loss of the Apple crop. There are no Apples from Yass to Tallong, and none here at Dundas.

As so many of the growers had a poor crop last year the total failure this year means disaster. Many growers are turning their attention to vegetables, but beyond the fact that they will at any rate provide food there does not seem much prospect for them with the reduced spending power of the community. Tomatoes look the most promising crop, and though these may be easily overdone for main crops, late fruit, where it can be produced generally, finds a market.

The shortage of fruit will help the rhubarb growers by extending the season for "pie-fruit," the demand for which usually falls off when fruit gets plentiful.

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Prompt Settlement.

**26 New Wholesale Fruit
Market, Melbourne**

Orange.

(From Our Correspondent.)

The fruit crop this season will be very light all round. The setting was most disappointing, on top of which some growers had the misfortune to be bumped by a hailstorm which gave the fruit a severe buffetting, and to add to our troubles rain practically spoiled the early Lyon's Cherries, which were just fit to start picking.

The thrips was very bad here, but we consider the cold snap caused as much damage as the thrips.

The principal fruits grown here are Cherries—Early Lyons, Napoleon, Florence, St. Margaret and Black Republican, of which only Napoleon and Florence are showing good crops.

Plums.—Angelina, Ponds Seedling, Grand Duke, and President, all of these practically a washout.

Pears.—Williams, Packham's Triumph, B. Bosc and W. Cole and B. de Caps. All are light except Williams and Bosc.

Apples.—Pomme de Neige, Jonathan, McIntosh Red, Rome Beauty, Democrat, London Pippin and Granny Smith. There are others, of course, but these are the main varieties. P. de Neige, Jonathan and McIntosh Red showing good crops; Rome Beauty fair, others light.

Grapes.—Principally Black Muscats, and these are looking well at present.

The area under vines has been reduced considerably on account of rain having spoilt the crops for several years past.

GRIFFITH (N.S.W.) SHOW.

At the 13th annual show of the Griffith (N.S.W.) Agricultural Society, opened on October 15, the following awards were announced in the fruit sections:—

Collection of citrus fruits, W. Boyd; Grapefruit, H. G. Macgraith; Citrus championship cup, Bradbury and Normantown.

There was also an excellent non-competitive exhibit of citrus fruit by the Griffith Producers' Company.

MURRUMBIDGEE IRRIGATION AREAS.

The following is a list of the principal fruits grown on the Murrumbidgee irrigation areas, including Yanco and Leeton, the figures being taken as at June 30, 1930:—

Oranges (principally W.N. and Val. late)—in acres—5,790; Lemons, 405; Mandarins, 177; Grapefruit, 50.

Apples: G.S., Jon., K. David, Cleo. and Delicious, 1,316 acres. Pears: W.B.C., Packham and Kieffer, 260 acres. Apricots (Trevatt, Moorpark and Mansfield), 1,176 acres; Quinces, 140 acres; Figs, 128 acres; Almonds, 308 acres; wine Grapes (Black Shiraz, White Shiraz, Doradillo, Grenache, Pedro Ximines, etc.), 4,069 acres; table Grapes (Black Cornichon, Ohanez, etc.), 767 acres; drying Grapes, Sultanas, Zante Currants, Gordo Blanco, etc., 1,779 acres; Nectarines (mostly Goldmine), 49 acres; Plums (mostly Angelina), 124; Prunes (Robe de Sargeant, D'Agen, etc.), 1,214 acres Peaches (Pullars, Golden Queen, Elberta, Phillips, Sims, Goodman's Choice, etc.), 2,579 acres.

Lavington.—A community fruit packing shed is to be erected at Lavington near Albury. The sum of £220 is to be made available from the recent successful display at the Albury Show.

Europe's Premier Fruit Brokers

LONDON HULL LIVERPOOL

CARDIFF MANCHESTER

The WHITE SERVICE

NEWCASTLE ANTWERP

WHITE & SON LTD. FRUIT DISTRIBUTORS & MARKETING SPECIALISTS
London Fruit Exchange, Spitalfields, E.1., England

KEELING & WHITE LTD.,
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WHITE & SON (HULL) LTD.,
Humber Street,
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THE NORTH OF ENGLAND FRUIT BROKERS LTD.,
Commercial Sale Room,
Deansgate, Manchester.

MORGAN, WHITE & CO.,
Cardiff,
Wales.

WHITE & SON LTD.,
(Covent Garden Branch),
36 Long Acre, London, W.C.2.

ROGERS, WHITE & CO.,
10-18 Victoria Street,
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FRUIT BROKERS CO.,
SPIERS & WHITE, S.A.,
Rue de La Navigation 2,
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WHITE & LEATHERLAND,
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For Full Particulars Apply to

TASMANIA:
H. JONES & CO. LTD.,
Old Wharf,
HOBART.

SOUTH AUSTRALIA:
GEORGE WILLS & CO. LTD.,
31 Grenfell Street,
ADELAIDE.

VICTORIA:
FARNHAM PTY. LTD.,
Broken Hill Chambers,
31 Queen St., MELBOURNE.

NEW SOUTH WALES:
BATLOW PACKING HOUSE & COOL STORES, RURAL CO-OPERATIVE SOCIETY LTD.,
Box 48, BATLOW.

WEST AUSTRALIA:
GEORGE WILLS & CO. LTD.,
156 St. Georges Terrace,
PERTH.

NEW ZEALAND:
J. A. REDPATH & SONS LTD.,
37 Johnston Street,
WELLINGTON.

RED SCALE.

Co-operative Fumigation Scheme.

This pest has been on the area for years, and trees have become infested to a greater or lesser degree all over the area. A close watch is now being kept on all citrus orchards, and it is incumbent on every owner to immediately notify the local inspectors of the appearance of the scale.

Most of the growers are fully aware of the importance of combating this menace to the citrus industry, and for years have fumigated their trees, finding that spraying was not thoroughly efficient enough to cope with the pest.

The greatest difficulty with spraying is that the spray does not seem to reach every insect, and thus, although a great quantity may be killed, the remainder are left to breed up again and thus in a very short time, given favoured conditions, the trees are re-infested.

Fumigation reaches practically every insect, and if thoroughly attended to should prove satisfactory for a fairly long period.

The greatest menace to good growers comes from neglected farms adjacent to their holdings, or from those growers who neglect to take sufficient care of their control methods

The new scheme inaugurated by the Griffith Producers' Co-operative Company should prove of immense benefit to the community in general, and also to the improvement of the products of the area.

This is a co-operative scheme for fumigating every citrus tree on the area, and a levy will be made on an acreage basis, varying according to the age of the trees to be treated

At a recent meeting of the shareholders the scheme was approved of, but full details are yet to be arranged.

This is a decided movement in the right direction, and cannot be otherwise than beneficial to the district, besides which it will strengthen the hands of local inspectors and officers of the Agricultural Department, who are satisfied that drastic means must be taken to protect those careful growers who carry out the regulations, against those who either neglect their holdings or own abandoned holdings that are nothing but a menace to adjacent growers.

HOW TO CONTROL WOODLICE.

The best control for woodlice (slaters) is to dust their haunts and hiding-places with boracac acid. A useful method is to set out flat boards in damp situations, and to dust beneath them with boracic acid when the slaters have commenced to congregate there. Do not apply the dust directly to any delicate plants, except weeds.

The use of lightly boiled potatoes cut into slices, which are then sprinkled with Paris green, calcium arsenate, or arsenate of lead powder, is also recommended. Place these potato baits under boards, stones, or in damp situations where the slaters accumulate for shelter.

ER, YES, EXACTLY!

A visitor from town once asked a fruitgrower how he disposed of his enormous fruit crops. The fruitgrower replied: "Well we eat what we can, and what we can't we can." The visitor stood perplexed for a moment, then said: "We do the same thing, we sell what we can sell, and what we can't we cancel."

SULPHATE of AMMONIA

Drastic Cut in Price

Following our recent announcement that the price of sulphate of ammonia would be reduced by 8/- per ton as from the 1st September, we have now to advise of

A Further Reduction of £1/7/- per ton

as from the 15th October.

This cut makes SULPHATE OF AMMONIA the cheapest it has ever been in Australia, and should bring it under the favorable notice of all those primary producers, who, in the past, have not appreciated its virtues as an influence to bigger and better yields.

SULPHATE OF AMMONIA more than ever sustains its reputation as the cheapest source of nitrogen to the Australian farmer and fruitgrower.

The retail price is now £12/2/- per ton, free on rails, less 2½ per cent. for cash.

Supplies from all Fertiliser Companies, or their agents, or direct from The Metropolitan Gas Co., 196 Flinders St., Melbourne, C.1.

Literature from

NITROGEN FERTILISERS PROPRIETARY LIMITED
360 Collins Street, Melbourne, C.1.

N.S.W. BANANAS FOR VICTORIA.

Mr. H. L. Anthony, President, N.S.W. Banana Growers' Federation, Visits Melbourne.

Meeting with Melbourne Wholesale Fruit Trade.

A MEETING of the Wholesale Fruit Merchants' Association of Victoria was held at Melbourne on November 10. Mr. H. M. Wade, who presided, introduced Mr. D. G. Wills, who represented several fruitgrowers' Associations on the Sydney and Melbourne markets, and Mr. H. L. Anthony, President, N.S.W. Banana Growers' Association.

Mr. Willis stated that he was now representing 4,000 fruitgrowers in the four States of Victoria, New South Wales, Queensland, and South Australia: as the Banana Growers' Federation of N.S.W. had appointed him as their representative on the Sydney, Melbourne and Adelaide markets, he asked for the co-operation of the trade. Mr. Wills congratulated Mr. Anthony on his appointment for a further two years as President of the N.S.W. Banana Growers' Federation.

Mr. H. L. Anthony said that the Banana Growers' Federation of N.S.W. comprised the whole of the Banana growers in the Northern districts of N.S.W.—extending from Coffs Harbor to the Tweed and Richmond. A few years ago the Tweed district produced 400,000 cases of Bananas annually, and had established a reputation for good quality. Owing, however, to the ravages of bunchy top, the industry along the Tweed was practically wiped out.

Scientific research revealed that the disease was spread by aphis. Every Banana plant in the district was dug out: strict regulations were enforced: replanting was proceeded with, and the industry was now re-established on a firm basis—better than ever before. There was no longer any fear of bunchy top. The N.S.W. Banana growing districts enjoyed ample rainfall: they were conveniently situated for supplying the markets, being only twenty-four hours from Sydney by rail, with another 24 to 36 hours for Melbourne. The area under Bananas was about 7,000 acres, from which a crop of 560,000 cases was expected this season. Shortly the crop should increase to 700,000 cases. Sufficient Bananas would be grown to supply the Sydney market, with substantial supplies for Melbourne as well.

It was not expected, however, that large quantities would be sent immediately. Supplies would be sent gradually.

Continuing, Mr. Anthony said he was observing the conditions of the Melbourne market and the quality of the fruit coming forward, with a view to developing the trade later on. The policy of his Association was one of co-operation. They recognised that the agent had an important part in the trade, and harassing restrictions were not desired.

The method of marketing their Bananas was under consideration, whether an open or a "closed" list. If it were decided to market their Bananas through a restricted number of agents, those would be selected who were best able to handle the business and who had the best financial references. He trusted that when growers were getting service from a particular agent they would stick to him and not go chopping and changing about.

With regard to ripening—the facilities seemed all right at present, but the question was, were the facilities sufficient for the hotter months of the year? He asked that agents give patient consideration to this question of ripening.

The Chairman thanked Mr. Anthony and Mr. Wills for their attendance. Mr. Anthony had now seen the market for himself and could be assured that there was an opening for the N.S.W. Bananas. With regard to items of policy affecting the trade, the fruit merchants were always prepared to meet and discuss matters freely and openly.

The meeting then closed.

RECORD TOBACCO CROP EXPECETED.

10,000 Acres Planted.

OFFICIAL FIGURES recently issued from Canberra, reveal that a record tobacco crop is anticipated. Allowing for certain failures which seemed inevitable, it appeared probable that the area planted totalled 10,000 acres, and the crop approximately 7,000,000 lb., valued at £1,250,000 at present prices. This comprised approximately one-third of the Australian requirements. The shrinkage in Customs revenue which will result probably will have to be make up by increased direct taxation.

SHELL
SHELL
REDSPRAY
OIL
SHELL
WHITE SPRAY
OIL
SHELL
MADE IN AUSTRALIA

OIL SPRAYS FOR HEALTHY TREES AND CLEAN FRUIT

Apart from their powerful insect-killing properties, Shell Spraying Oils achieve their success through their ability to penetrate right into every crack and crevice in the tree. Contact results in certain death to insects in all their stages, and a protective film remains for a long period to ward off further attacks.

Use the Safe Sprays--SHELL--Redspray or Whitespray

SHELL SPRAYING OILS

THE SHELL COMPANY LIMITED

6015

WESTERN AUSTRALIA.

Mt. Barker.—Mr. A. T. Booth, Secretary Mount Barker Fruitgrowers' Co-operative Society Ltd., advises as follows under date November 16:

Our fruit crop on the whole will be a very good one. Thrips has again made its appearance, but fortunately, about four days too late for the main varieties. Some of the later blossom, however, was again ruined, and varieties such as Rome Beauties, Five Crowns, etc., will be very light.

Our main anxiety at present is to secure sufficient boats from Albany to lift the crop at regular periods to enable packing to be carried out satisfactorily.

Donnybrook (25/10/31).—It is still too soon for an accurate forecast, but present indications are that the Apple crop will be medium to light. The blossoming of most commercial varieties was good, but after last season's exhaustive crop, I think Jonathans will be light, Dunns light, Cleos. medium to heavy, Grannies medium.

Plums are very poor, Peaches fair. We have had a very good spring climate, and thrips has been negligible to date, and could now only affect Romes, which are not largely grown here.

Trip to Java and Singapore.—The Commonwealth Railway Department has organised a Christmas trip to Java and Singapore, the cost being £58 first, and £48 second; dates—December 24, 1931, to January 30, 1932. Full details from 623 Collins-street, Melbourne.

DRIED PRUNES IN N.S.W.

Now Controlled Under Dried Vine Fruit System.

The Minister for Agriculture (Mr. W. F. Dunn) invites attention to a regulation made by the Governor-in-Council, which appeared in the Government Gazette of November 13, 1931, declaring dried Prunes to be dried fruits for the purposes of the Dried Fruits Act, 1927-1929. This regulation takes effect as from February 15, 1932, that is, three months after date of gazettal.

This means that from the date stated dried Prunes will be brought under the control of the New South Wales Dried Fruits Board, which at present controls dried vine fruits, viz., dried Currants, dried Sultanas, and dried Lexias.

Following upon the disorganised market for dried Prunes during the current year meetings were called by the various organisations of Prune growers in New South Wales, and resolutions were carried at each of these meetings requesting the Minister for Agriculture to recommend to the Governor-in-Council that action be taken as above indicated.

The New South Wales growers hope that the growers of the other States producing Prunes, viz.. Victoria and South Australia, will, following the lead of New South Wales, take similar action. Then, with an amendment to the Commonwealth Dried Fruits Act, 1928, to enable interstate trading in Prunes to be controlled, Prunes produced throughout Australia will be just as effectively controlled as dried vine fruits are.

POTASH FOR QUALITY

Science proves
What EVERY GROWER KNOWS

Every orchardist knows the reputation of the Long Ashton (England) Fruit Research Station. Read what Long Ashton says:—

"Apples from Potash-treated trees ripen beautifully, while Potash-starved fruit remains green."

"Potash increases an apple's life and resistance in cold storage."

"Manuring heavily with Potash, the result was A PERFECT EATING APPLE."

POTASH increases quantity, too, but quality is the factor that pays in the orchard.

Muriate and Sulphate of Potash obtainable from all fertiliser merchants.

If you have any manurial problems, drop a note to Department A, at the address below for an honest opinion by men of scientific and practical experience.

Pacific Potash Ltd., (Australian Office) 711 O'Brien House, Young Street, Sydney.

FERTILIZER EXPERT LEAVES AUSTRALIA.

Mr. W. V. Blewett Transferred to Egypt.

Mr. W. V. Blewett, who since the formation of Nitrogen Fertilisers Pty. Ltd., has been in charge of the company's technical staff, left Australia by the s.s. "Otranto" on the November 30 to direct agricultural research work by Imperial Chemical Industries in Egypt.

Mr. Blewett came to Australia in 1927 as a member of a delegation of experts invited here by the Commonwealth Government, his part of the delegation being to report on the fertiliser possibilities of the Commonwealth, chiefly in relation to nitrogenous fertilisers. Mr. Blewett was closely identified with much horticultural experimental work, and through his capacity to visualise Australia‘s fertiliser needs, many public and private organisations with which he came in contact greatly regret that he should have been transferred to another country just at a time when a number of his experimental works were coming into fruition.

It is because of his interest in pasture improvement, however, that Mr. Blewett will be chiefly remembered by a wide circle of agricultural and pastoral friends.

The work in connection with horticulture and pasture improvement which Mr. Blewett initiated will be carried on by the advisory officers of Nitrogen Fertilisers located at various centres throughout the Commonwealth.

PATERSON'S

CLENSEL

Insecticide and Fungicide

BRITISH PRODUCT

Used throughout the World for 30 Years

Read the following sound advice from the

MANUFACTURERS OF CLENSEL

There is another very important point which we cannot emphasise too strongly, and this refers very specially to trees and bushes. The great secret is not to wait until the pests make their appearance, but to **spray the plants, trees or bushes with a dilute solution of Concentrated Clensel Insecticide and water;** anything from a 1 per cent. to a 6 per cent. solution while the pests are invisible and in the larvae stage, and this spraying process should then be repeated at intervals of round about two to three weeks throughout the season.

For years many growers were averse to adopting this procedure, but many have told us that the actual cost of this is many times wiped out by the increased production which they receive, coupled with the fact that their Gardens and Orchards are in perfect condition, which represents thoroughly sound capital.

"Clensel" is non-poisonous, non-inflammable, destroys insect and fungus pests—also a tonic for all trees and plants.

AUSTRALIAN DISTRIBUTOR—Bruce Anderson, 15 Loch St., Camberwell, E.6.
WEST AUSTRALIA—Messrs. Bernard Shaw & Co., 53 St. George's Terrace, Perth.
SOUTH AUSTRALIA—Messrs. T. Paltridge & Sons Ltd., Mount Barker, South Australia.
TASMANIA—Maxwell Foster, 29 Cedric St., North Hobart, Tasmania.
NEW SOUTH WALES.—Distributor Wanted.
QUEENSLAND—The Fertilizers Distributors Ltd., Roma Street, Brisbane.

Excellent Reports being received from all over Australia

NEW SOUTH WALES.

Curlwaa.—The vines, consisting mainly of Sultanas, Currants and Gordos, are carrying a very heavy crop. Apricots are on the light side. Elberta Peaches, on the whole, are carrying a fairly normal crop, except in orchards not sprayed for curl leaf, where damage was done. The late Peach crop is very light, and Nectarine crop is a failure.

The Pears, mainly Williams, are carrying a fair crop (though not very extensively grown), and Apples, which are also only grown to the extent of a few acres, are carrying a very heavy crop.

It is rather early to forecast the coming Orange crop, but it is safe to say that it will be considerably lighter than that of the past two seasons.

It is generally considered that the bad setting has been caused by the long periods between the two first irrgations (the ground becoming dry during the setting stage), together with the changeable weather experienced during that time.

Thrips is also blamed for the trouble, although more spraying and sulphur dusting has been done to check that pest than in any previous season.

The Navel Orange crop has been harvested and a start is being made with the Valencia Lates, which crop is fairly heavy and the quality excellent.—S. P. Taylor.

TRADE WITH THE EAST.

Australia's trade with the Near East is steadily increasing. In 1929-30 Australian goods to the value of £17,523,806 and imported goods to the value of £19,192,744, leaving an unfavorable balance of £1,668,938.

In 1930-31 the exports had increased to £19,319,889, and the imports declined to £11,909,233, leaving a balance of trade in favor of Australia to the extent of £7,410,656.

An insect destroyer that has proved very successful in dealing with the thrips plague is stocked by E. T. Moulden & Son Pty. Ltd., 48 Victoria-street, opp. Victoria Markets. Used in dust form, the insecticide has been responsible for saving many Strawberry crops at Olinda, Kalorama, and other berry-growing districts.

FRUIT TREES

ONE GROWER SAYS—

"The trees (750) arrived in excellent order and are of exceptional quality. Our local inspector said they were the best trees he had seen. You will get my order, about same number, for next year."

QUALITY.
QUANTITY AVAILABLE.
Catalogs and price lists from—

John Brunning & Sons
Somerville Nurseries,
Somerville - Victoria - Australia
Established 1866.

Tobacco Growing.

To obtain the greatest return per acre in tobacco growing, it is essential that within ten days of the first days' transplanting, all seedlings which have died, or which show signs of distress, be replaced with healthy plants.

Tobacco is a rapid-growing crop, making a heavy demand on soil resources. The soil must thus be kept constantly cultivated during the growing period of the crop, thus destroying weeds, keeping the surface soil loose and friable and conserving moisture. It is advisable to start inter-cultivating from ten to fourteen days after setting out the young plants, providing care be taken not to approach closer than 6 inches to either row. This cultivation should not be more than 3 inches deep, as a deep working close to the row would tend to unduly loosen the soil in which the young plant has been set. The area missed by the horse-hoe should be hand-hoed immediately. Care must be taken not to injure the roots or bruise the leaves or stalk of the plant.

The period between successive cultivations should not be more than two to three weeks, the second cultivation being the deepest, though not exceeding the depth of the second ploughing. Subsequent cultivations should become shallower until the top soil is merely being scratched. One man could cultivate five acres per day with a single horse-hoe.

This work should not be continued after the plants have reached such a size that the leaves suffer injury through contact with the swing-bars or any portion of the machine.

In order to control caterpillars, the seedlings should be dipped in arsenate of lead, this, under normal weather conditions, protecting them for about fourteen days. Then the plants should be dusted with 1 lb. of arsenate of lead in 30 lb. of pollard, or 1 lb. of Paris green in 25 lb. of pollard. To get rid of cutworms the following bait will prove effective:—Mix 1 lb. or arsenate of lead with 25 lb. of bran, which is brought to a doughy condition by adding water sweetened with molasses, treacle, or honey. This is rubbed into pellets and distributed towards evening in the affected areas. Dusting operations should be continued at fortnightly intervals until the time at which topping takes place.

If transplanting seedlings under dry conditions it is better to irrigate before than after setting the plants in the field. The tobacco plant cannot stand excessive moisture, this bringing on blue mould and various root rots.

Topping.—The seed head makes its appearance from eight to ten weeks after transplanting. "Topping" should be done when the bulk of the seed heads are borne on stalks about 4 ins. long, care being taken not to bruise the leaves.

Suckering.—The removing of suckers from the plants is very important, and should on no account be neglected. These suckers reappear three to four times during the one season, and each successive crop must be removed. They should not be allowed to reach a greater length than three inches. The main stalk is supported just below the leaf junction with the fingers of the hand, while the sucker is broken off by a downward and sideward pressure of the thumb.—"Journal of Agriculture," Vic.

Tobacco Culture.—Dr. B. T. Dixon, Director Australian Tobacco Investigation, has written stating that various phases of blue mould are being studied, including that of controlled temperatures.

This work is still in progress. No authority, however, was given for the publication of the statement that "it is possible to control blue mould by raising the soil temperature."

Further, in reference to Mr. Temple Smith—it is pointed out that Mr. Smith was formerly Tobacco expert for Victoria, not for the Commonwealth.

Factory Proposed at Bendigo.

The proposals for the establishment in Bendigo of a tobacco factory made by Mr. Amos B. Vanhelt when he was in Bendigo some time ago has induced many farmers to embark on the cultivation of tobacco. It is understood that British and United States interests propose launching the manufacturing industry. Many farmers in the irrigation districts are planting in the open fields. The largest area being planted is 50 acres by Mr. Keck, M.L.C., at his Elmore property, in the Campaspe Valley. An experimental crop last year gave encouragement to plant on a larger scale this season. The plantation is equipped with curing bins.

In the Bendigo district many Tomato growers are growing experimental plots, and should the season's crop prove successful the area under cultivation will be largely increased.

DUTY ON TOBACCO.

Goulburn Valley Growers Protest Against Revision.

At a meeting of the Goulburn Valley Tobacco Growers' Association on November 28, Mr. V. R. McNab presiding, it was resolved to enter an emphatic protest against any variation in the import and excise duties on tobacco. Messrs. N. Hanlon and E. A. Mollard were appointed to give evidence before the Tariff Board.

Messrs. W. Young and J. C. Turnbull (Ardmona), A. Nowell (Shepparton), and others said that a revision of the tariff would be disastrous to growers: an additional 150 landowners were now growing tobacco.

Tobacco Cultivator.—Up-to-date equipment for cultivating tobacco plantations is being designed for Australian conditions and manufactured by D. Harvey Pty. Ltd., Box Hill, Victoria. Special attention is directed to the Harvey-Cosgrove Tobacco Row Cultivator, which has many excellent features. The rotating attachment which cultivates around each plant is only 4 in. high, enabling the soil to be stirred under the leaves close to the stem. The plants are not straddled, thus avoiding injury. Further details are given in the advertisement on page 705 in this issue. Full particulars and illustrated pamphlets are available free on request.

TOBACCO SEEDLINGS FOR SALE

Grown on Virgin Sand in New District

Enquire—
Pine Tobacco Co. Pty. Ltd.
Merrigum - - - - Victoria.

TOBACCO SEEDLINGS

In addition to being, probably, the largest growers of light leaf Tobacco seedlings, we claim to have spent more than any other Grower in trying to protect our Nurseries from disease and in experimental work.

Our three Nurseries, situated 30 miles apart, have a capacity of well over 4,000,000 plants. The varieties grown are Conqueror, Adcock, Warne, Hickory Pryor and Yellow Pryor. Prices range from 17/6 per 1,000, according to quantity. Book your order now, and save disappointment.

BRUNN'S DIRECT SEED SUPPLY CO.,
82 Swanston Street, Melbourne.
Quote "Fruit World," Dec.

Something NEW for TOBACCO GROWERS

"Harvey-Cosgrove" Tobacco Row Cultivator

Two Methods of Cultivation
Which Method will be YOUR Choice?

Compare These Methods

THERE are two methods of Tobacco Cultivation.

The usual practice involves the use of a Scuffler to work between the rows and men hand-hoeing between and around the plants. This is two operations and costly, besides there is the risk of injury to the leaves with the hoe handles.

The second method is the one whereby the cultivating machine straddles the row and the operator rides or walks astride of the plant. By this method the operator is called upon to control the machine, as well as to cultivate with quick movements, both out and in using both hands, whilst the horse is walking at a steady gait. This is almost humanly impossible. The process of planting will prove how unreasonable it is to expect a man to cultivate by the method under consideration. Practical experience has shown that when seated on a planter a man can plant only alternate plants, yet he is expected to cultivate in and out between each plant—(to pull the machine in and open it out before reaching the next plant)—and in addition retain control of a horse moving forward all the time.

Furthermore, kicking, flogging, with machine handles, or otherwise injuring the delicate leaves is inevitable, and when the plants have grown to a certain height, this method of cultivation has to cease.

With This Method

THE "HARVEY COSGROVE" Tobacco Row Cultivator, does the work speedily, efficiently, and thoroughly in one operation only. Whilst it is performing the work of a Scuffler, Harrow, or other cultivating implement between the rows, it cultivates the soil and removes the weeds around each plant at a rate equivalent to Ten Men with hand hoes.

The rotating attachment which cultivates and hoes around each plant is only 4 in. high. This enables the grower to cultivate under the leaves of the plant close to the stem.

The height of the plant does not matter with the "Harvey Cosgrove" Row Cultivator, because it does NOT straddle the plants, thus there is no risk of injuring or rubbing the leaves as is the case with a machine that straddles the plants.

A special automatic contrivance frees the tynes from all weeds and rubbish removed from the soil.

The designers of this ingenious machine conscientiously believe that they have perfected it to a point where improvement is almost impossible, and confidently look forward to its reception by Tobacco Growers as a veritable boon.

TOBACCO GROWERS:—We Can Supply Tobacco Planters from Stock—No Delay.

Write for printed folder to

D. HARVEY, *Implement Manufacturer,* **Box Hill, E.11, Victoria**

AGENTS:

Victoria.—F. R. Mellor, 440 Elizabeth St., Melb.

New South Wales.—Buzacott & Co. Ltd., 7-11 Market St., Sydney.

South Australia.—Silbert, Sharp & Bishop Ltd., 283 Rundle St., Adelaide.

Tasmania.—Max Geeves Pty. Ltd., 4 Davey St., Hobart.
R. D. Hassell Pty. Ltd., 31 St. John St., Launceston.

Queensland.—Buzacott's (Queensland) Ltd., Adelaide St., Brisbane.

West Australia.—H. J. Wigmore & Co., 613 Wellington St., Perth.

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,

Advertising in this Journal.

NEW SOUTH WALES.

Sydney:
Chilton, F., City Fruit Markets.

VICTORIA.

Melbourne:
Cave, F., & Co., Melbourne.
Davis, J., Pty. Ltd., Wholesale Fruit Market.
Millis, A., & Sons, Wholesale Fruit Market.
Lister, G., Wholesale Fruit Market.
McLean, N. N., Pty. Ltd.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Wholesale Fruit Market.
Renouf, R., Wholesale Fruit Market.
Ross, J. W., Wholesale Fruit Market.
Silbert, Sharp & Davies, Wholesale Fruit Market.
Stott & Son, T., Wholesale Fruit Market.
Tim Young & Co. Pty. Ltd., Wholesale Fruit Market.
Vear, F. W., 49 William Street.
Wilson, H., Wholesale Fruit Market.
Woolf, G., Wholesale Fruit Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Wholesale Fruit Market.

QUEENSLAND.

Brisbane:
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitten, W. J., & Co., Fruit Markets.

TASMANIA.

Hobart:
E. R. Cottier Pty. Ltd., Temple Place, Macquarie Street.
Jones, H., & Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin:
Co-operative Fruitgrowers of Otago Ltd.

GREAT BRITAIN.

London:
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull:
The Port of Hull, London and N.E. Railway. Rep., Burns, Philp & Co. Ltd., 7 Bridge Street, Sydney.

Manchester:
The Port of Manchester. Rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool:
Johnson, T. S., & Co.

GERMANY.

Bremen:
Fruchthandel, Gesellschaft.

Hamburg:
Astheimer, P. H., & Son, Fruchthof.
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof.
Timm & Gerstenkorn.

DENMARK.

Copenhagen:
M. Asvarisch, Copenhagen.
International Fruit Import Co.

NEW SOUTH WALES.

Sydney (21/11/31).—The market representative of the N.S.W. Fruitgrowers' Federation reports prices as follows:—Apples: G.S., 14/- to 16/-, small 11/- to 13/-; Yates, 12/- to 14/-, small 8/- to 10/-; Sturmers, 8/- to 11/-. Pears: Broompark and W.N., 10/- to 13/-, small 2/- to 10/-; Jos., 16/- to 18/1; small, 10/- to 14/-.

Arrivals this week were 10,000 cases Apples from Tasmania; 3,000 cases Apples, and 500 cases Pears from Victoria. Demand firm, good keeping quality fruit desired.

Apricots, 3/- to 9/- per box. Bananas, 8's and 9's, 17/- to 22/-, 7's 14/- to 16/-, 6's 10/- to 13/-. Cherries, choice 4/- to 7/-, rain split 2/- to 3/-; Grape Fruit, 7/- to 12/-. Lemons, 3/- to 7/- per gin case. Oranges, common 5/- to 8/- bus., Val. 5/- to 8/6 per gin case. Peaches, 6/- to 10/- per half-case. Pineapples, smooth 14-16, 10/6, Ripley 24-30 7/- to 9/-. Passions, 9/- to 17/-, special fruit scarce. Strawberries, 6/- to 18/- per doz. punnets. Tomatoes, 4/- to 9/- per box. Cucumbers, prickly 10/- to 14/- bus., Apple 6/- half-case. Beans, 7/- to 10/- bus. Peas, 5/- to 8/- bus.

WEST AUSTRALIA.

Perth (20/11/31).—Apples: Yates, dumps, 7/6 to 13/-; G. Smith, 10/- to 19/-; Doherty, 7/6 to 10/-; (special to 12/-); Rokewood, 7/6 to 11/6; other varieties, 7/6 to 13/-. Citrus: Navels, flats, 3/6 to 7/-, dumps 7/6 to 11/6 (special to 13/-); Valencias, 4/- to 6/6 (special to 7/9); Oranges, plain, flats, 4/- to 6/-; (special to 8/-); Lemons, 2/- to 3/9; (special to 6/-); stone fruit: Apricots, flats, 5/- to 14/-; (others from 3/-); Loquats, 7/- to 14/-; Tomatoes: Geraldton, flats, 14/- to 21/-; (inferior from 5/-, special higher); local, 15/- to 30/-; (special to 40/-).

QUEENSLAND.

Brisbane (25/11/31).—For rough-leaf Pines from Cairns, from 6/- to 7/- case ruled. Mangoes from Bowen of a special class reached 9/- case, with a general run of from 7/- to 8/- case; Mangoes from Townsville, 6/- to 8/- case; Val. Oranges from the South, 12/- to 13/- case for better class, second crop 7/- to 9/- case; cured Lisbon Lemons from the South, 11/- to 12/- case; other sorts, 7/- to 9/- case. Good demand for Vic. Apples, Yates realising from 14/- to 16/- case; Queensland Oranges of better class, 8/- to 15/- case; second crop from 4/- to 6/-.

Tasmanian Apples: Demos., 11/- to 13/- case; S.T.P., 3½ in. to 2¾ in., 10/6 to 11/6; 2¼ in. to 2⅜ in., 10/- to 10/6; small, 7/- to 8/-; F.G., 2½ in., 13/6 to 14/-; 2⅜ in., 10/- to 13/- case. Local Papaws, 1/- to 3/- case; Yarwun Papaws, 5/- to 8/- case; smooth-leaf Pines of large size, 4/- to 6/- case; special 7/6 to 9/-; Ripley Pines, 8/- to 10/- case; Passionfruit, first grade 8/- to 10/-, second grade 3/- to 4/- case; local second crop Navel Oranges, 5/- to 7/- case; local Mandarins, 4/- to 7/- half-case; local Lemons, 2/- to 4/- half-case; Queensland Mandarins, 3/- to 4/- half-case; Lemons, 2/- to 4/- half-case.

TASMANIA.

Hobart (27/11/31).—Del., 8/3 to 11/- case; F.C., 4/6 to 5/3; S.T.P., 3/4 to 4/8; C.P.M., 7/6 to 11/6; Gooseberries, 3/6 to 3/9 half-case; Cherries, 16/6 to £1/2/- half-case; Tas. Tomatoes, 22/- half-case.

SOUTH AUSTRALIA.

Adelaide (27/11/31).—Apples, eating 13/- to 14/- case, cooking 12/- to 13/- case; Bananas, Queensland, 24/- to 26/- case; Cherries, 16/- to 20/- case, light 12/- case;

Gooseberries, 10/- case; Lemons, 5/- to 6/- case; Oranges, common 6/- to 8/- case, Navel 8/- to 12/- case, Poorman 4/- case; Pineapples, 18/- case.

MELBOURNE WHOLESALE FRUIT MARKET.

Adelaide Tomatoes proved to be the best line handled by merchants at the Melbourne Wholesale Fruit Market last month. Over one hundred thousand half cases were received and disposed of at prices that were satisfactory. Sales for best quality averaged 10/- to 12/- per half case.

Among the largest handlers of these Tomatoes are Silk Bros., Herbert Wilson Pty. Ltd., Tim Young & Co. Pty. Ltd., Geo. Lister Pty. Ltd., J. H. Young & Co. Pty. Ltd,, T. Stott & Sons and J. Davis Pty. Ltd.

Local Tomatoes are backward owing to the wet season and supplies are not expected until the middle of December. First supplies will come from Barham and Koondrook, and they will be followed closely by supplies from the Shepparton district.

One of the most attractive lines of South Australian Tomatoes at the market was packed by Roy Bishop, of Torrensville. H. M. Wade & Co. have had a continued demand for this pack at prices that are very satisfactory.

J. H. Young & Co. Pty. Ltd., who disposed of 4,000 cases of Adelaide Tomatoes during November, have worked up a fine trade with Tasmania and New Zealand with Oranges and are now packing large quantities of Valencias for the Dominion. Sales for Blue Ribbon brand Navels have been steady with this firm at 13/- to 14/- case.

J. Davis Pty. Ltd. report excellent prices maintained for Adelaide Tomatoes during the past month. Queensland Pines were of good quality, and the firm handled large quantities of other tropical fruits, despite the adverse weather conditions that prevailed during November.

Herbert Wilson Pty. Ltd. are handling a line of Oranges from Leeton, N.S.W,, with a very attractive label. Blue Sapphire brand certainly catches the eye.

Bell, Banson Pty. Ltd. report having received a splendid line of peas and beans from the Bairnsdale district which were in good demand. The thrips plague caused considerable damage to Drysdale peas and prices for supplies from this district suffered accordingly.

F. A. Chinn & Co., who handle large quantities of vegetables, report good prices for Bairnsdale peas. Gippsland has never produced peas of such excellent quality as those now being marketed.

Since H. and S. Frankel established themselves at the Wholesale Fruit Market they have steadily increased their business and have had to increase storage accommodation by taking over a large building opposite their store at the markets in Peel-street. Their principal selling lines last month were Oranges from Mildura. Pineapples, Bananas, Cucumbers from Queensland, and Adelaide Tomatoes.

Cherries and Strawberries in small quantities arrived towards the end of last month, and prices were good. Cherries brought 10/- half-case and Strawberries up to 9d. punnet. Gooseberries brought 3/- to 5/- per dozen pounds. The prices ruling during last week in November were as follows:—

Apples—Eating, 6/- to 12/-; cooking, 6/- and 11/-, few 1/- higher. Apricots, to 15/-. Cherries—Best to 10/- half-case. Oranges—Navel—North-East districts, unwrapped to 12/-, medium (to 126) 8/- to 10/-, best counts (140-168) 10/- to 12/-; North Central districts, 8/- to 10/-; Mildura, Murrabit, unwrapped, standards, 7/- to 9/-, selected to 10/-; Mildura, wrapped, 14/- to 15/-; S.A., 14/- to 15/-, few to 16/-; commons, 5/- to 9/-; Valencias, standard, unwrapped, 8/- to 9/-. Lemons—Local, 3/- to 5/-, few 6/-. Grapefruit, good standard large to 12/-, medium to 15/-, few selected higher. Gooseberries—Green, 3/- to 5/- dozen lb. Strawberries, 4d. to 9d. a punnet Bananas—Queensland, green, 9 and 8 to 20/-, 7 to 18/-, 6 to 14/-. Pineapples, 14/- to 16/-; Passion Fruit, S.A. to 20/- half-case. Tomatoes—S.A. to 10/- half-case. Cucumbers, 12/- to 14/-.

MARKET PRICES IMPROVE.

Later.—On Tuesday, December 1, as the result of two days of warm weather, prices improved considerably at the Melbourne Wholesale Fruit Market. Tomatoes from Northern Victoria brought 22/- to 30/- per case; S.A. Tomatoes, 15/- to 17/- ½ case; Oranges, 12/- to 15/-.

Peas and Beans were scarce, and prices good. A good line of Beans from Murrabit brought 36/- bag, while Peas were in good demand at 16/- bag.

VICTORIA.

Melbourne (27/11/31).—The Melbourne market manager of the Federal Citrus Council of Australia reports that owing to the dull weather conditions, sales of citrus generally have been slow during the week, and prices have shown an easier tendency. In particular, Navels have had to be cleared at 1/- to 2/- lower than the prices ruling at the beginning of last week, although prices have been maintained for a few selected sound lines. Prices of Valencias, selected Mediterranean sweets, and similar commons have also eased 1/- a case, but with a prospect of warmer weather over the week-end there should be an improvement. There has been no improvement in the Lemon position, and the prices quoted have been largely nominal, as large quantities have been cleared at no more than 4/- a case. Sales to-day were as follow:—Navels, average standard, unwrapped, Victoria, 60-112 6/- to 9/-, 126 up 10/-, with odd sales to 11/-, faulty lines lower, few selected unwrapped lines, including South Australian, to 13/-, best counts; selected wrapped to 14/-, best counts, with odd sales to 15/- and 16/-. Commons, 5/- to 8/-; selected Mediterranean sweets and good South Australian Bloods, 2/- to 3/- higher; Valencias, average standard, Victorian and Mia, 96-112 8/-, 126 up 9/-, with odd sales to 10/-, selected lines higher; best unwrapped Milduras to 12/- and 13/-; best wrapped Milduras to 13/- and 14/- best counts; Grape Fruit, plains to 11/-, good standards, large to 12/-, medium to 16/-, a few selected Curlwaa lines 3/- to 4/- higher; Lemons, nominally 3/- to 5/-, few specials 6/-.

RETAIL FRUITERERS' ASSOCIATION.

The monthly meeting of the Executive of the Melbourne and Metropolitan Retail Fruiterers' Association was held on November 5, a fair attendance of delegates being present. The Secretary reported that since last meeting a conference had been convened between the officers of the Agricultural Department, Pea and Bean merchants, and retailers, to consider some action to prevent the continual practice of some growers who send bags of Peas and Beans to market deficient in weight. Mr. Meeking was in the chair, and with his officers and the cordial assistance promised by the wholesale agents, there is every possibility of some improvement in the near future.

The Secretary also stated that he had attended a meeting by invitation, convened by the Victorian Fruit Council, to consider ways and means to further the "Eat More Fruit" campaign inaugurated by Mr. J. P. Gibson, and that the latter was at present conducting an extensive campaign throughout the principal factories and technical schools of the metropolis.

Regret was expressed by various delegates at the great loss that the fruitgrowers would sustain through the ravages of the thrips pest, and hopes were expressed that the scientific branch of the Agricultural Department would before long discover some remedy to exterminate the pest.

Notes on the Retail Trade.

During the month there has been some improvement in the retail trade, vegetables have been a little cheaper, and the warmer weather has naturally compelled the public to eat greater quantities of both fruit and salads. Tomatoes have also eased in price, and compare very favorably with former years. Apples are getting scarce, and prices are rising accordingly. The same applies to Navel Oranges, which are selling remarkably well. Lemons are still plentiful, but will sell better with the warm weather. Cherries and Strawberries are of poor quality, and although the prices are moderate, the sales of both are very slow, and better sales may be expected should the quality improve.—Edw. W. Thompson, Secretary, Melbourne and Metropolitan Retail Fruiterers' Association.

NEW ZEALAND.

Dunedin (19/11/31).—Reilly's Central Produce Mart report full supplies of vegetables, citrus fruits, Bananas, and American Grapes available. Prices: Apples, Jon., choice 6/-, 7/6, small 3/-, 4/-; Sturmers, choice 6/-, 10/-, small 3/-, 4/-, cookers 6/6, 7/6; Delicious, choice 8/-, 14/-, small 3/-, 6/-; American Delicious, Newtown, 24/6; Red Pearmains, White Pearmains, 24/6; Navels, 10/- to 23/6; Valencias, 14/-, 22/-, according to size; Californian Grapes, 32/6; Australian Lemons, 20/-, 22/6; Passions, N.Z., 10/6, 12/6; Californian Valencias, 40/6 to 48/6, according to size; Cal. Grape Fruit, 44/-; Bananas, choice ripe, Samoans, 26/-, green 22/-; Gooseberries, 2½d., 3d.; Local Tomatoes, 1/6, 1/8; Christchurch, 1/-, 1/7; Strawberries, extra choice, 2/-, 2/4, choice, 1/2, 1/9, small, 10d., 1/-.

CALCID BRIQUETTES *for* CITRUS FUMIGATION

11
12
13
14
15
16

The machine drives the fine cloud-like powder to all parts of the tented tree.

Consistently give the
Highest Percentage Kill
of any proprietary fumigant or spray
and
Effectively Control
Red Scale

50,000 trees will be fumigated with Calcid Briquettes on the Murrumbidgee Irrigation Area this Season.

Australian Distributors:
HOUGHTON & BYRNE

SYDNEY
2 Bridge St.
MELBOURNE
46 Elizabeth St.
ADELAIDE
12 Page St.
BRISBANE
12 T. & G. Bldg.

Consign your Fruit to—
J. JAEGER
Telegrams: Jaegagento, London.
FRUIT IMPORTER
18 Bedford Chambers, Covent Garden
London, W.C.2.,
and compare the results with those of the competition.
Try and See.

AGENTS REQUIRED.

Rockhampton
The starting point for the Great Queensland Central Railway has a population of 30,000, and offers a good market for your fruit.

ORCHARD FRUIT SUPPLIES
offer a prompt and reliable selling service. Best Prices. Prompt advices and returns.

Reference:—Australian Bank of Commerce.
'Phone: 1584.
P.O. Box, 223. Brand: ORCHARD RTON.

Codlin Moth Control

No Single Pest has Cost the Orchardist More

Eliminate Your Losses

Safeguard Your Fruit

Use—"Vallo" Arsenate of Lead (Paste-Powder)

Why is this "Vallo" product so universally popular?

BECAUSE OF ITS—
WONDERFUL FINENESS,
SUPERLATIVE QUALITY,
OUTSTANDING SUSPENSION,
REMARKABLE KILLING POWERS.

"Vallo" Prepared White Oil

A spray which will kill the codlin moth eggs before they hatch. Unlike White Oil Emulsions, this product contains no added water.

The many tests which have been conducted with this ideal spraying specific have proved, beyond doubt, the many advantages of this oil, when used in combination with Arsenate of Lead for the calyx and cover sprays, and thereafter in accordance with directions.

Victor Leggo & Farmers Ltd. - Melbourne

N.S.W. Distributors—A. Victor Leggo & Co. Pty. Ltd., 9 Phillip Street, Sydney.
Queensland Distributors—A. Victor Leggo & Co. Pty. Ltd., 72 Albert Street, Brisbane.

PORT of LONDON

The World's Best Fruit Market

Sales can always be depended on for best quality fruit at highest prices.

Besides its own vast population, London supplies the seaside resorts. Tourists make their headquarters in London and want the best fruit.

London has always been the centre of the Australian and New Zealand fruit trade, and although many efforts have been made to divert it to other ports, the presence of its huge local market with expert distribution agencies will ensure it remaining so.

A well-known fruit exporter, after a recent trip, reports that the facilities for handling fruit are second to none in the world. Every convenience for the sales and showing of fruit are provided, all fruit is sold by auction, and he found that the broker always looked to the growers' interests.

All particulars as regards charges, etc., can be obtained from:

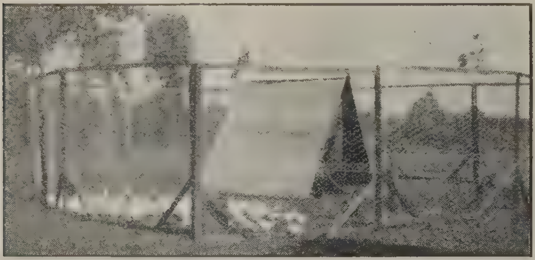
Capt. A. W. Pearse, Port of London Authority, **10 Bligh Street, Sydney**

Chicken Rearing Methods.

(Reprinted from the "Australasian Poultry World.")

Referring to the article on "Chicken Rearing Methods" which appeared in our October issue, Mr. W. R. Kempson, of Wynnum South, Queensland, has forwarded us the illustration here reproduced of the movable night arks as used there instead of permanent houses for the chicks. Accompanying it is a short note on the construction of hurdles and night arks.

Hurdles.—Frames 6 ft. long, 5 ft. high, 2 in. x 1 ft. hardwood covered with wire-netting. Can be linked together with wire hooks and carried about in threes or fours; one is used as a gate and a steel standard driven in to swing it on.



Night Ark.—Two frames, 6 ft. x 6 ft., 2 in. x 1 ft. Oregon, covered with wire-netting and malthoid, then leant together to leave a width of about 6 ft. on the ground line. A length of 15 in. ridge capping is wired over the tops. Chicks are started in these on straw bedding, and when hardened off a bit, this is replaced with a ½ in. mesh wire-netting floor with perches set just above it. A hessian curtain is hung at each end from 1 ft. below eave. The hurdles are used round each night ark for the first three days, then removed. Chicks are found to know their own ark quite well after this.

GREEN FEED.

Some poultrymen will never realise the full value of feeding as much green feed as the chicks and hens will eat. It has recently been proved that with stock which has not received enough green food a sudden large feed of it will do more harm than good. Fowls are not unlike ourselves and green feed not only supplies bulk and minerals, but it has a direct effect on the health of the flock. See to it that you have a good supply sown, especially for cutting during the hot, dry weather and during the winter months. One of the best crops for summer use in very dry districts is maize, and successive sowings should be made from October until January. Cut it while young and tender and chaff it so that the stalks can be eaten too. For winter use chou moellier should be sown in the early autumn—sow the seed very thinly in rows 3 ft. apart. Thin out the plants as they grow until they are 4 ft. apart. Keep the soil cultivated and pull the bottom leaves as they mature. While not so succulent as silver beet, this crop grows well in cold, frosty weather and gives a much greater yield. Plants can be transplanted, but better results are obtained if the seed is sown. Oats and barley are good catch crops and may be sown almost any time.

HOW TO APPLY LIME.

When soils are to be limed, never dig it in, because it gets down deeply all too soon. First dig or trench the soil, and then apply the lime on the top. Then point it in lightly with the fork, and the whole depth of the soil will be benefited.

MORE EGGS FOR LESS MONEY

If you obtain a greatly increased number of eggs for an infinitesimal increase in cost, you have reduced your costs of production, and are so better able to meet a fall in price if it occurs. And if prices are up, then it is so much extra in your pocket. That is just what Karswood Poultry Spice will do for you, if you feed it regularly in the birds' evening mash. When it increases egg-production it reduces your costs of production. It's good business both ways.

A Convincing Test.

Dear Sir,

I have been using Karswood Poultry Spice for the last four years. I keep about 300 poultry, half of them free range and the other half on the intensive system. The ones on the intensive system are in five different compartments of 30 birds in each, all White Leghorns, equal in type and age. The three compartments Karswood fed, in three months averaged:

January 601 per compartment, 30 birds
February 589 ,, ,, 30 ,,
March 565 ,, ,, 30 ,,

Two compartments without Karswood Spice averaged for the same period:

January 397 per compartment, 30 birds
February 325 ,, ,, 30 ,,
March 298 ,, ,, 30 ,,

A reduction of 735 eggs.

Yours faithfully,
W. UNSWORTH, Thomas Estate,
20/5/29 Shepparton, Victoria.

7 Eggs a Day From 8 Fowls.

Dear Sir,

I have been using Karswood Spice for several years, with excellent results. I have only 8 fowls, but have been getting on an average 6 and 7 eggs a day for some time, which is satisfactory, don't you think?

(Sgd.) VICTOR POWELL, 54 Shipsters Road,
5/5/29 Kensington, S.A.

NOTE THE ECONOMY.

1/- Packet supplies 20 hens for 16 days.
2/- Packet supplies 20 hens for 32 days.
13/- (7lb.) tin supplies 140 hens for 32 days.

SUPPLIES.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—½ lb. packet, price 1/-; 1 lb. packet, price 2/-; 7 lb. tin, price 13/-; 14 lb. tin, price 25/-; 28 lb. tin, price 48/-

KARSWOOD
POULTRY SPICE
INCREASES EGG-PRODUCTION WITHOUT FORCING

FEEDING RATIONS.

"Want to Learn" (Ormond) writes:—

Question 1.—How can you tell when the whites of eggs are watery?

Answer.—This can easily be seen by candling the eggs—that is, examining them before a strong light in a darkened room, as if testing for fertility during incubation.

Question 2.—Will sponge cake by itself or mixed in wet mash be of any value to hens, pullets, or chickens?

Answer.—Sponge cake could be used with other house scraps by adding it to a wet mash which is made up on a bran and pollard foundation. It would be of little value fed alone either to adult stock or chicks. Why not use any stale sponge cake in the house for puddings, trifles, etc.?

Question 3.—Is Lupol suitable for chickens when mixed in wet or dry mash?

Answer.—Lupol would be suitable for feeding chicks after they reach the age when they are put on a wet mash. It gives best results if scalded or soaked and then added to the mash by measure. The quantity would vary according to the amount of green feed which the chicks obtain.

Question 4.—Will you give me a good chick mixture for wet mash, something the chicks will like, make them grow and put health into them? Do not state a number of items, because it all looks nice in print—I want something simple but effective as above.

Answer.—A simple wet mash that could be fed to chicks from 3 weeks old can be made up by weight as follows:—Pollard 55 lbs., bran 35, meat meal or dried buttermilk 8, bone meal 2. Lupol should be added in quantities based upon the amount of green feed available.

Question 5.—Will you also give me a good wet mash for laying hens, and a grain mixture for evening meal, also for hens?

Answer.—A simple wet mash for laying hens:—Feed 3 ozs. per day daily—Wheat pollard 50 lbs., bran 30 lbs., maize meal 10 lbs., with 10 lbs. meat meal or dried buttermilk added. If milk in any form is available it can be substituted for meat. Lupol can be added as a substitute for green feed if necessary.

Feed mixed grain at night, using wheat 60 lbs., short stout oats 20 lbs., maize 20 lbs. Keep granulated charcoal and shellgrit always before the birds. Minced raw onion given once a week is a splendid tonic.

MANURES FOR ORCHARDS.

In a new price list issued by the Phosphate Co-operative Co. (which produces the "Pivot" brand of chemical fertilisers) some useful fertiliser mixtures are listed.

Of particular interest is the 2:2:1 mixture, which contains two parts of superphosphate, two parts of sulphate of ammonia and one part of potash, and which conforms very closely to the "Nitrophoska" concentrated fertiliser which was, until recently, on the market. There is another mixture containing equal parts of superphosphate and sulphate of ammonia, and two mixtures which have been based on the Victorian Departmental Potato Expert's recommendation—one is the popular mixture containing six parts of superphosphate to one of sulphate of ammonia, while the other contains three of superphosphate to one of sulphate of ammonia. Both these mixtures have convincingly established themselves amongst potato growers.

A noticeable feature of the price list is the favorable price at which these mixtures are obtainable, the 2:2:1 mixture being retailed at £10/7/6 per ton, and the 1:1 mixture at £9 per ton. These lines, at the prices mentioned, appear likely to be well sought after by orchardists and mixed farmers, and the enterprise of the Phosphate Co-operative Co. in this direction is commendable.

HARDWOOD CASES.

A New Point of View.

Mr. Esmond Russell, fruit exporter, of Melbourne, writes to the "Fruit World" as follows:—

Possibly in this fruit industry of ours, no one subject has raised more controversy than the burning question, Which is the best case to use, hardwood or softwood? Also which style, the old, well-known dump, or the Canadian? Each has its distinct advantages, and each its supporters, and their many arguments for and against are fairly well known to all, therefore this is not written simply to reiterate old points, but rather to stress and make known some of the new features pertaining to Victorian timbers when treated by kiln-drying combined with the entirely new process of reconditioning.

Those who have been loudest in decrying hardwood have usually admitted that Victorian Mountain Ash is quite an ideal timber if only it were not for its nasty habit of shrinking, warping, twisting, and curling.

Dry kiln seasoning, combined with reconditioning, simply will and must sweep away all grounds from under the feet of even the strongest objector.

The art of kiln drying is not entirely new, but was always accompanied by losses due to shrinkage and to a percentage of boards warping to such an extent as to be either useless or at best of little value. Reconditioning has completely eliminated these losses, all boards after treatment being restored to full size and also to original shape.

Dried and reconditioned timbers definitely lose all tendencies to subsequent shrinkage and warpage, and it is claimed may even be left in sun or rain without risk of these occurring. Further, the natural strength is unimpaired, and appearance, if altered at all, is for the better. Tendency to split is decreased, and the texture is improved to such an extent that boards may be worked up easier, and with better results. In fact, the texture much more nearly approaches that of medium softwood, weight is reduced to much about the same, and nail holding capacity greatly increased.

The outstanding results are that probably the best floorings and weatherboards obtainable are being made from Victorian Ash, and may be used without fear of any of the old troubles, while for furniture and motor body work its value has been greatly enhanced. It is here the orchardist becomes interested, because only butt and second logs can be used for these high-grade purposes, leaving top logs and younger trees available for boxes of all descriptions.

The cost of processing, while involving a good deal of extra handling, is not excessive, being countered as it is by the elimination of waste, and cases will therefore be quite competitive with imported shooks. On the other hand, there is considerable capital outlay involved, and for this reason supplies may not be expected to be available in large quantities for some little time. At the moment, while quite a number of plants have been installed and are actually at work, only one or two of these are handling case material. Others will rapidly be forced to come into line, and millers generally will realise that they will have to treat their timber to sell their goods.

Thus, having the goods, why should our fruit be exported in any box other than the well-known dump? A case that has always been distinctive to Australia and has therefore become as good as a registered trade mark for our produce. It is a box that we understand West Australia will never depart from; it certainly suits Tasmania, and probably Victoria, better than any other, and it most certainly also suits a very large proportion of English and Continental buyers.

NEW REGISTRATIONS.

Tobacco Planters Ltd., Sydney. Capital £30,000, divided into 10,000 ordinary and 20,000 preference shares, to manufacture and deal in tobacco, etc. Subscribers: N. W. Caldwell, O. M. Neal, J. Sharp, L. Harrison, M. Neville, J. R. Little, J. S. Richardson.

New South Wales.

Comino Bros. (Sydney) Ltd. Capital, £5,000. To take over the business of fruit and produce merchants now carried on at the Muncipal Markets by Comino Bros. First directors, G. Comino, T. Comino, J. Comino.

Orange Fruit Packing and Distributing Company, Orange. Com 10/11/31. Ptrs.: Rex L. Molyneux and Ernest A. Osborne. Regd. 5/11/31.

Victoria.

Vitamine Dried Fruits Supply (Albert Baden Cane and Eric Henley Stevens), 3 Durham-road, Surrey Hills. Com. October 19. Regd. October 20.

Herald Preserving Co. (Charles Stevens Brooks and Henry Kaiapoi Brooke), manufacturers of sauces, jams, etc., 71 Whiteman-street, South Melbourne. Com. October 14. Regd. October 16.

Geelong and Western District Preserving Co. (Australasian Jam Co. Pty. Ltd.), general merchants, 1 Garden-street, South Yarra. Com. September 1. Regd. October 15.

Mordialloc Markets Pty. Ltd. Regd. November 11. Capital: £2,000 in £1 shares. Names subscribed to memorandum: Adeline Hennelly, 1 share; William Harkness McLorinan, 1 share.

Sang Goon & Co., 327 King-street, Melbourne (formerly of 133 Little Bourke-street, Melbourne), and Victoria Market, Melbourne, fruit merchant. In November, 1929, Fong Cheow became a member. Regd. November 7.

C. Vita Liquid Fruit Co. (James Arthur Boyd, Sir Stanley Seymour Argyle, and Alexander Sydney Joske), 539 Lonsdale-stret, Melbourne. Com. November 9. Regd. November 9.

Dan Wuille-Mumford cup—to be competed for this season.

DAN WUILLE & CO., LONDON.

An interesting booklet entitled "Romance," is to hand from Dan Wuille & Co., London, giving in literary and pictorial form a description of the activities of this firm. Pictures are shown of the firm's headquarters at London, and branches at Liverpool, Manchester, Hull, Cardiff, Bristol, Leeds, Birmingham, Newcastle and Glasgow.

Their new and enlarged premises at Longacre, Covent Garden, are described and illustrated. Details are also given of their overseas organisation. Canary Islands (Bananas and Tomatoes); U.S.A., Canada, and alsewhere. The Victorian representative is J. G. Mumford, Wholesale Fruit Markets, Melbourne.

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"Fruit World Annual"

Comprehensive review of Australian and New Zealand fruit industry.

"The Fruit World," Box 1944
G.P.O., Melbourne.

Victorian Viticultural Notes.

Good Prospects at Rutherglen.

There is every indication that vineyards in the Rutherglen district will yield a very good crop. The vines are in wonderful heart, and no damage, so far, has been done by frost. They are clear of disease. Spraying is now in progress. It seems that winemakers will have such good crops of grapes that there will be no need for them to buy outside to meet their requirements.

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Favourable Forecast in Irrigated Areas.

In the irrigated areas there is a splendid show of sultanas, very nearly, if not quite as good as for the record year 1928-29, and in marked contrast to the poor show last spring.

Other sorts also promise well. Gordos have more inflorescences than the vines can bring to perfection, and unless severely curtailed by bunch control before blossom the quality of the fruit for table purposes and the size of berry must suffer.

Response to Swabbing Warnings.

A feature of the season has been the very gratifying response to warnings to swab and spray against black spot. Seldom have the vineyards been so adequately protected. The small showings of black spot, notwithstanding the recent scanty rains, indicate what would have occurred had the spring been showery. Sprayings are wisely being repeated with gratifying results; the vineyards being on the whole very clean.

Erinose is showing freely in some districts, but this mite seldom does harm and is amenable to sulphur dustings, which also benefit the vines in other respects, notably in improving setting at blossom and later on, in advancing the date of ripening.

"Black Leaf 40" Death to Aphis (Plant Lice) and Other Insects

Aphis and other insects are common enemies of the orchardist and gardener. Protect your trees, vines and plants with "Black Leaf 40."

"Black Leaf 40" has the endorsement of Agricultural Colleges, Experiment stations and orchardists. It is the World's leading aphis specific. It also kills the young larvae of many chewing insects when sprayed upon them so as to wet their bodies.

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"Black Leaf 40" has a dual action. It kills plant insects both by fumes and by contact. This double-killing action makes "Black Leaf 40" unusually effective in insect control.

Paint Roosts . . . Kill Poultry Lice

Poultrymen find that if they paint the roosts lightly with "Black Leaf 40" the lice on the birds are killed. The heat from the birds' bodies releases fumes which destroy lice, as the flock roosts on perches.

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"Black Leaf 40" is registered by us in Australia and New Zealand as a Trade-Mark and Brand. Users are familiar with the red labelled packages and the black leaf design prominently displayed thereon. Beware of imitations. Insist upon genuine "Black Leaf 40," made only by Tobacco By-Products & Chemical Corporation.

In the Orchard and Garden

"Black Leaf 40" is recommended for killing wooly aphis, apple aphis, peach aphis, aphis on roses, other flowers and vegetables, mussel scale (young), Harlequin fruit bug, holy or cross bug, oleander scale (young), San Jose scale (young), red scale (young), red mites (Summer), rutherglen bug, pear and cherry slug, thrip, fine scale (young), pea mite.

In the Poultry Yard

Paint the roosts lightly with "Black Leaf 40" just before the birds go to roost. Body-lice will be destroyed while the flock roosts. To help prevent mites from attacking fowls, tie or tack a piece of heavy cloth around ends of roosts and roost supports and saturate with "Black Leaf 40;" spray inside of house with "Black Leaf 40," three tablespoonsful to a gallon of water to which soap has been added.

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To look at the sunny side of everything, d make your optimism come true.

To think only the best, to work only fothe best, and to expect only the best.

To be just as enthusiastic about the success of others as you are about your individual success.

To forget the mistakes of the past, and press on to greater and more far-reaching achievements and success.

To wear a cheerful countenance, and give every living creature you chance to meet a smile.

To give so much time to the improvement of yourself that you have no time to criticise others.

To be too large for worry, too noble for anger, too strong for fear and too happy to permit the presence of trouble.—"Pueblo Centrol Bulletin."

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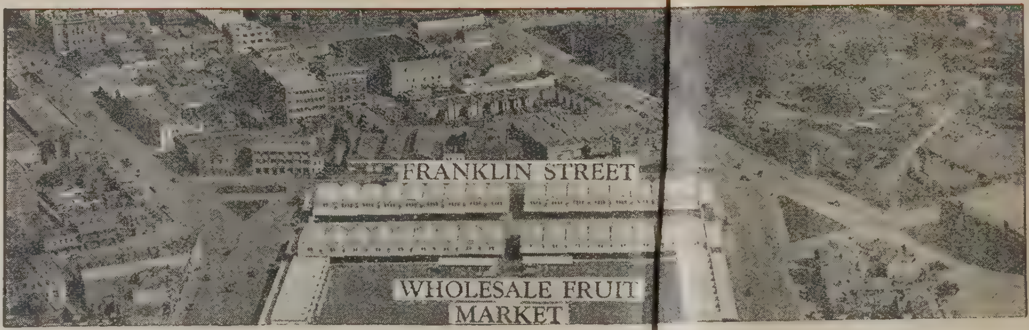

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